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UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CHILD PHYSICAL ABUSE: RELATIONSHIP OF PARENTAL SUBSTANCE USE TO SEVERITY OF ABUSE AND RISK FOR FUTURE ABUSE

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

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Norman, Oklahoma
2001

UMI Number: 3001315

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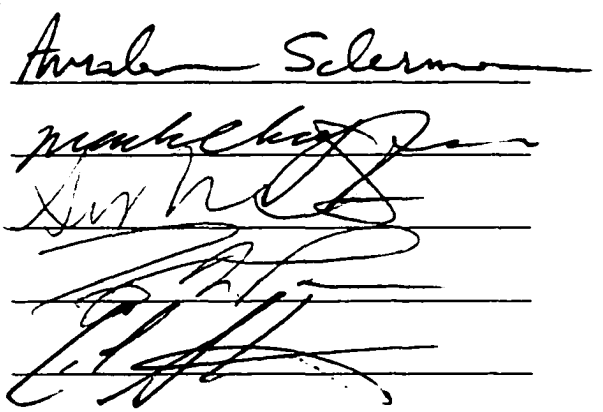
A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

BY



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Abstract

The purpose of this study was to investigate the dose-effect relationship between substance use (alcohol and/or drug use) and several child physical abuse outcomes in a sample of abusive parents. Outcomes examined included severity of parental physical abuse behavior and degree of risk to engage in future abuse. Participants consisted of 62 abusive parents, ranging in age from 21 to 63 (M=34.05, SD=8.76), who agreed to participate in a federally-funded clinical trial for physically abusive parents and their children conducted at a children's hospital. Participants were referred to the project by the Child Protective Services (CPS) after a finding of confirmed or probable child physical abuse. The current study utilized pretreatment data from the larger study. Data was obtained from multiple sources including the abusive parent, the assigned CPS caseworker, and CPS case records. Five separate measures were used; four were completed by the abusive parent: The Child Abuse Potential Inventory, Diagnostic Interview Schedule – Alcohol Module, Diagnostic Interview Schedule – Drug Module, and a demographic questionnaire. The remaining measure, the Abuse Dimensions Inventory, was completed by a trained evaluator on the basis of CPS records and caseworker report. Descriptive statistics, analyses of variance, multivariate analyses of variance, and Pearson product-moment correlations were performed to test the proposed hypotheses of a dose-effect relationship between parental substance use and child physical abuse. Overall, results did not offer support for a dose-effect relationship between substance abuse and either outcome measure. However, the findings did indicate that parents who reported two

or more symptoms of both alcohol and drug disorders were at greater risk to engage in future abuse, compared to other parent participants. This group of parents also reported higher levels of personal distress, unhappiness, perceived loneliness, as well as lower levels of ego strength.

Child Physical Abuse: Relationship of Parental Substance Use To Severity of Abuse and Risk for Future Abuse

Despite continued efforts toward prevention and remediation, child abuse and neglect continue to be all too common in the United States. In 1997, over 3 million children were reported for child maltreatment to child protective service (CPS) agencies and, of these, just under 1,000,000 children were confirmed by CPS as victims of child abuse and neglect (U.S. Department of Health and Human Services, 1999). This translates to a victimization rate of about 14 out of every 1,000 children in the U.S. general population. Child physical abuse, second in prevalence only to neglect, accounts for approximately 25% of reported maltreatment incidents each year (U. S. Department of Health and Human Services, 1999).

Numerous studies have examined characteristics that may place parents at risk for physically abusing a child, and, although no single profile exists (Milner, 1992), a number of group-level perpetrator characteristics have been identified that are believed to represent specific areas of risk for child physical abuse (Berenson, Stiglich, Wilkinson, & Anderson, 1991; Chaffin, Kelleher, & Hollenberg, 1996; Gillham, Tanner, Cheyne, Freeman, Rooney, & Lambie, 1998; Holden & Banez, 1996; Milner, 1992; Milner & Chilamkurti, 1991; Murphy, Jellinek, Quinn, Smith, Poitrast, & Goshko, 1991; Salzinger, Feldman, Hammer, & Rosario, 1991; Wolfner & Gelles, 1993; Zuravin & DiBlasio, 1996). Parental substance abuse is one risk factor that has been consistently found to be associated with violence, in general, and with child physical abuse, specifically.

Substance Abuse and Violence

The association between substance abuse and violence has been widely researched and is often cited in the literature. Retrospective study of state prison inmates serving time for violent offenses indicates that substance use was involved in 64% of the offenses (U.S. Department of Justice, 1991). Of these, 54% of the perpetrators reported being under the influence of drugs or alcohol at the time of the offense. Controlled studies of aggressive responding also offer support for the relationship between substance abuse and violence, reporting that individuals with a history of substance dependence are more aggressive than individuals with no drug use history (Allen, Moeller, Rhoades, & Cherek, 1997). Moreover, a relationship between polysubstance use and levels of aggression and hostility has been demonstrated among female and male substance abusers seeking treatment, regardless of the substances used by the individual (McCormick & Smith, 1995).

Existing research clearly indicates that there is a relationship between alcohol, drugs, and violent behavior (Englander, 1997; Pihl & Hoaken, 1997); however, there is less agreement about a causal relationship between them (Johnson & Belfer, 1995). Reviews of the empirical literature have led to the following conclusions about the relationship between substance abuse and violence: the nature of the relationship is interactional, multifactorial, and different for different classes of substances (Pihl & Hoaken, 1997); and, in general, violent acts involving substance use are a combination of the physiological effects of the substances themselves, the personality of the user, and the social setting in which the act occurs that favors or disfavors aggression (Miller & Potter-Efron, 1990).

Alcohol is the substance most consistently associated with violence (Cohen, 1985). Researchers note, however, that this is likely due to the common use and abuse of alcohol in the U.S. rather than to more pronounced aggressive effects of ethanol compared to other substances (Englander, 1997; Miller & Potter-Efron, 1990). Nevertheless, alcohol has certainly been linked to aggressive behavior. One exception to this, however, is at the highest levels of intoxication, when individuals cannot act upon aggressive urges (Miller & Potter-Efron, 1990).

Researchers note that alcohol's most marked effect is on the brain (Bassuk, Schoonover, & Gelenberg, 1983), where it impairs nearly every aspect of information processing (National Institute on Alcohol Abuse and Alcoholism, 1994). Aggression can be triggered by alcohol use during intoxication, withdrawal, and in psychiatric states (Miller & Potter-Efron, 1990). Results of a recent meta-analysis reported an effect size of 0.43 for intoxicated over non-intoxicated aggressive responding in humans, and the author concluded that alcohol does affect aggression, particularly in men, although through indirect means (Bushman, 1996). An association between alcohol and violence is well demonstrated, but it is unclear how much of the association is due to the direct effect of alcohol or to a link between alcohol use and other factors that are associated with violence (Moeller, Dougherty, Lane, Steinberg, & Cherek, 1998).

Drug use has also been associated with aggressive behavior. However, the relationship between drug use and violence tends to vary by drug type. For instance, stimulants such as cocaine and crack cocaine have commonly been associated with violence, but there is no clear evidence that these stimulants cause a general increase

in violent crime (Englander, 1997). Rather, it may be that levels of aggression increase when taken in high doses, via certain routes of administration, and by people who have aggressive tendencies (Englander, 1997). Barbiturate use has also been associated with interpersonal violence (Grinspoon & Bakalar, 1985). Although barbiturates are thought to be sedating, they tend to produce irritable, argumentative behavior, perhaps because part of their effect is one of releasing the individual from normal inhibitions (Cohen, 1985). Most research examining cannabis, on the other hand, indicates that it is at least as likely to reduce violent impulses as to increase them (Grinspoon & Bakalar, 1985; Taylor & Leonard, 1983). In sum, research has demonstrated an association between drug use and violence, however, some drugs appear more likely than others to encourage violent behavior.

The relationship between violence, substance abuse and other psychiatric disorders has also been examined and increased rates of violence have been reported among those with both a substance use disorder and other psychiatric diagnosis. A study examining the relationship between psychiatric disorders and family violence in a community sample found that 54.5% of those who had a psychiatric diagnosis were involved in violent behavior and, in turn, 49% of those involved in violent behavior had one or more psychiatric diagnoses (e.g., antisocial personality disorder, recurrent depression, alcohol abuse and/or dependence) (Bland & Orn, 1986). Furthermore, the rate of violent behaviors among alcohol abusers with comorbid antisocial personality disorder (ASDP) and/or recurrent depression in the sample was 80-93%, whereas the rate of violent behaviors among those who did not have diagnoses was significantly lower (15.5%). Other studies have also shown significant differences in the effect of

alcohol on aggressive responding among individuals with ASPD and those without ASPD, with a greater increase in aggressive responding after alcohol occurring among individuals with ASPD (Moeller et al., 1998). High comorbidity exists between substance abuse and other psychiatric disorders, and psychiatric patients with comorbid substance abuse disorders are said to constitute the greatest risk for violence (Pihl & Hoaken, 1997).

Studies examining the substance abuse-violence relationship have reported strong associations between substance abuse and specific types of violence such as domestic abuse. Rates ranging from 48% to 87% have been reported for the percentage of batterers that are under the influence of alcohol when they assault their partners (Collins & Messerschmidt, 1993; Johnson & Belfer, 1995). Drug use is also associated with domestic violence. Of men attending a domestic violence treatment program, 63% had a current diagnosis of psychoactive substance abuse or dependence, while 92.5% had a lifetime diagnosis (Brown, Werk, Caplan, & Seraganian, 1999). Furthermore, results indicated that dangerousness and frequency of abusive behaviors increased as severity of substance abuse increased.

Conceptual Framework for Substance Use-Physical Abuse Relationship

Child abuse that occurs while the abuser is under the influence of alcohol and/or drugs is yet another type of violence that is of particular concern. Recent models of child abuse have conceptualized the relationship between substance abuse and child physical abuse as interactional and multifactorial. For instance, the Model of Intergenerational Substance Abuse, Family Functioning and Abuse/Neglect (Sheridan, 1995) reflects the complexity of factors associated with child physical

abuse in its proposal that substance abuse has a direct impact on child abuse, as well as a mediated influence by hindering aspects of family functioning such as parent-child interactions. The model proposes that these direct and mediated relationships between substance abuse and abuse/neglect continue to impact the family over time, directly and/or indirectly influence offspring substance abuse, and are repeated in subsequent generations unless effective intervention occurs. The model is based on the empirical relationships found between parental substance abuse, family dynamics, abuse/neglect, and substance abuse in offspring (Sheridan, 1995).

Other models have described the impact of substance use on cognitive functioning and affective responding and how this may ultimately lead to child physical abuse. Substance use may directly impair cognitive abilities (Steele & Josephs, 1990), which may in turn have an indirect impact on family violence through increased miscommunication among family members, a limited focus on situational cues, an inadequate estimation of immediate threat and consequences, and an increased likelihood of violence (Miller, Smyth, & Mudar, 1999). Literature has noted that parents are less inhibited, have reduced judgement and emotional control, and, consequently, may have a lower threshold for violence when under the influence of alcohol and drugs (Finkelhor, 1986; Kumpfer & Bays, in press).

As of yet, a clearly supported and accepted model has not emerged, although researchers generally agree that risk for child physical abuse involves the complex interplay of multiple factors and the role of substance abuse is likely a complex one.

Substance Use-Physical Abuse Relationship

Extensive literature has examined the connection between parental substance abuse and child physical abuse. With the exception of a few studies (see Orme & Rimmer, 1981), research has repeatedly demonstrated a link between parental substance abuse and child physical abuse across various settings through review of case records and controlled studies (Chaffin et al., 1996; Holmes & Robins, 1988; Kaplan, Pelcovitz, Salzinger, & Ganeles, 1983; Kelleher, Chaffin, Hollenberg, & Fischer, 1994; Kolar, Brown, Haertzen, & Michaelson, 1994; Miller et al., 1999; Whipple & Webster-Stratton, 1991; Windle, Windle, Scheidt, & Miller, 1995).

Prevalence of Substance Use Among Abusive Parents. Reviews of reported child abuse cases have offered strong support for the comorbidity of child physical abuse with parental substance use. A recent review of the CPS case records of severely physically abused children under age 5 indicated that 54% of the mothers and 50% of the fathers in the sample reported a history of alcohol and/or drug abuse (Miller et al., 1999). A similar study reported that 43% of the cases reviewed involved at least one parent who had a documented problem with either alcohol or drugs (Murphy et al., 1991). Of these cases, 34% reportedly abused only alcohol, 26% only drugs, and 40% abused both drugs and alcohol. Other studies have indicated that half of all reported child abuse cases reviewed were associated with parental drug abuse and 64% percent of cases were associated with alcohol and drug abuse (Chasnoff, 1988). A similar percentage of parents abusing alcohol and drugs was reported by Famularo, Kinscherff, and Fenton (1992) in their review of custody cases involving parental maltreatment. Results also revealed that alcohol abuse by

the abusive parent was associated with child physical abuse and that drug abuse was associated with sexual abuse; but, interestingly, polysubstance abuse did not contribute any additional predictive value to the effects of alcohol in predicting physical abuse (Famularo et al., 1992). The association between drug abuse and sexual abuse, as well as the polysubstance abuse findings from this study should be taken with caution, however, since they have not been replicated in other studies.

Parenting Practices of Parental Substance Users. Investigations of the parenting practices of parents with substance use disorders have also demonstrated a relationship between child abuse and substance abuse. Actual reports by opiate-addicted parents in methadone maintenance treatment reveal significant levels of physical punishment among substance-abusing parents (Kolar et al., 1994). For instance, 46% reported they had hit a child harder than they thought they should, 16% hit a child with a fist, 46% hit a child with something other than their hand, 46% threatened a child with a weapon, and 1% used a weapon with a child (Kolar et al., 1994). Nineteen percent of parents also reported previous charges for child neglect or physical abuse.

Research has also demonstrated increased child abuse potential among parents with histories of substance use disorders compared to those without such a history (Ammerman, Kolko, Kirisci, Blackson, & Dawes, 1999). Parents with lifetime histories of substance use disorders had higher Abuse scale scores on the Child Abuse Potential Inventory (CAPI; Milner, 1986) than those without such history and were more likely to score in the elevated range. No differences were found between parents with current diagnoses of substance use disorders and those with past (but not

current) histories. So, the positive association between substance use disorders and abuse potential persists in parents even after they no longer have a substance use diagnosis (Ammerman et al., 1999).

Comparisons to Nonabusers. Comparisons of abusive and nonabusive parents indicate a significantly higher prevalence of current or previous substance abuse among abusive parents. For instance, a comparison of the frequency of alcoholism among court-referred parents and parents whose children were inpatients at a children's hospital indicated a significantly higher prevalence of current or previous alcoholism among court-referred families (52%) in contrast to control families (12%) (Famularo, Stone, Barnum, & Wharton, 1986). Diagnoses of alcoholism were also given significantly more often to abusive parents referred to a hospital-based child abuse and neglect treatment program compared to control parents of nonmaltreated pediatric outpatients at the same hospital (25% vs. 5%) (Kaplan et al., 1983). Additionally, the abusive parents were more often given diagnoses of antisocial personality and labile personality, suggesting that parental psychopathology contributes to the occurrence of child abuse and neglect. These findings were further supported by Dinwiddie and Bucholz (1993) who found increased lifetime rates of antisocial personality disorder, alcoholism, and depression among self-identified child abusers in comparison to nonabusers in a sample comprised of clinical, community, and family study participants. Substance use disorders were also more common among a national sample of abusive/neglectful parents than matched controls, even after controlling for depression, household size, antisocial personality disorder, and social support (Kelleher et al., 1994). Additionally, retrospective reports by adults

whose parents were alcoholic revealed that they were more likely to have experienced unfair or harsh parental discipline than respondents who reported that their parents were not alcoholic (Holmes & Robins, 1988).

Substance Use and Risk for Abuse

Along with research demonstrating comorbidity, longitudinal studies have elucidated a prospective relationship between substance abuse and child physical abuse. For instance, substance use disorders were strongly associated with physical abuse onset in a national study that examined the relationship between risk factors identified at initial assessment and self-report of the onset of physical abuse one year later (Chaffin et al., 1996). Examinations of families reported to CPS have also shown that substance abuse is predictive of subsequent maltreatment reports (Terling, 1999; Wolock & Magura, 1996). Prospective examination of family reunification practices and reentry rates (e.g., reported incidents of child abuse/neglect after children previously removed from the home were returned to the home) has also demonstrated a risk relationship between substance abuse and child abuse (Terling, 1999).

Parental substance abuse and child abuse clearly co-occur in the general population on a frequent basis (Dinwiddie & Bucholz, 1993; Famularo et al., 1986; Holmes & Robins, 1988; Kaplan et al., 1983; Kelleher et al., 1994; Whipple & Webster-Stratton, 1991) and research supports a risk relationship between them (Chaffin et al., 1996; Terling, 1999; Wolock & Magura, 1996).

Severity of Child Physical Abuse

Although relationships between certain factors, such as substance abuse, and *risk* for child physical abuse are frequently studied, few studies focus on *severity* of child physical abuse as an outcome. Research addressing factors related to severity has increased in recent years; however, this body of literature continues to be small and has many unanswered questions. Severity of physical abuse was first studied in the 1970s by Seaburg; however, a recent review of the research literature on the predictors of physical abuse severity yielded only 20 additional relevant articles (Hegar, Zuravin, & Orme, 1994). Furthermore, only four of these studies used multivariate analytic techniques to predict severity of child abuse (Hegar et al., 1994). These studies measured severity on the basis of the degree of injury to the child, and none of the studies investigated factors related to severity of physical abuse behavior by parents.

Definitions and Measurement of Severity. The lack of an agreed upon definition and method for measuring severity is a major difficulty in the body of research that has addressed severity of child physical abuse. Researchers in this area often use definitions of what is severe versus less severe abuse that are unique to the particular study, rather than using a consistent definition of severity across studies (Chaffin, Wherry, Newlin, Crutchfield, & Dykman, 1997; Hanson, Smith, Saunders, Swenson, & Conrad, 1995), thus making it difficult to compare the findings.

Review of research on predictors of injury severity is illustrative of the inconsistencies in definition and measurement that exist in this area. For instance, Hampton (1987) classified severity of physical abuse injury or impairment as fatal,

serious, moderate, or probable. Rosenthal (1988) used a different classification system that consisted of the following dichotomous categories: serious injury and minor injury. A classification system for severity used by Zuravin, Watson, and Ehrenschaft (1987) consisted of the following four categories: 1) no mention of injury; 2) superficial injury—cuts, bruises, scratches, welts, or first degree burns; 3) moderate injury—second degree burns, cuts requiring sutures, mild concussions, fractures of small bone, etc.; and 4) severe injury—internal injuries, severe concussion, third degree burns, compound fractures and simple fractures of long bones, etc.—or death. Another method of defining severity was utilized by Dalgleish and Drew (1989) that included multiple indicators thought to comprise severity of abuse. Indicators for severity of abuse were the nature of the injuries, the pattern of the abuse over time, the suspicion engendered by parents' explanation, and the level of abuse: low, medium, and high (Dalgleish & Drew, 1989).

Even in instances where researchers have utilized the same measurement scale, differences in application of the scale have created inconsistent findings. For example, Seaburg (1977) defined and measured severity with an 11-point severity scale. Using this scale, Seaburg created a severity rating for each child by summing the points for *each* injury that the child sustained. Interestingly, Daley and Piliavin (1982) later reanalyzed the same data set using the same Likert scale, but they applied the scale somewhat differently and found differing results. These authors created a severity rating by using the scale score for the *most* severe injury sustained by each child (Daley & Piliavin, 1982), noting that Seaburg's procedure of summing the points for *each* injury sustained by the child created a bias toward interpreting

multiple-injury cases as automatically more severe. The differences in the way that these authors treated severity in their analyses may account for differences in the factors that they identified as explaining variability in injury severity. Consistent with the recommendations of Daley and Piliavin (1982), Zuravin, Orme, and Hegar (1994) also rated severity in their review of abuse reports by assigning a rating to a child on the basis of the most severe injury sustained, regardless of the total number of injuries. Four levels of injuries were defined: no injury, mild injuries, moderate injuries, and severe injuries.

Researchers examining child neglect have used a method similar to those used by Zuravin et al. (1994) and Daley and Piliavin (1982) for measuring severity of abuse (e.g., coding severity on the basis of the most severe injury sustained). The Child Neglect Index (CNI; Trocme', 1996) was designed to specify type and severity of neglect. This index consists of six neglect scales (supervision, nutrition, clothing and hygiene, physical health care, mental health care, developmental/educational care) and each scale is rated on a four- to five-level severity scale, ranging from adequate, to inconsistent, to inadequate, to seriously inadequate. The CNI is scored by combining the score on the scale receiving the highest severity rating with an age score. Field-testing has shown that the CNI correctly predicts the maltreatment classifications of the National Incidence Study (NIS) child protection worker survey form (Trocme', 1996). CNI scores also predict worker decisions to keep cases open for additional services and are strongly correlated with an existing widely used measure of neglect.

Overall, the research examining severity of child physical abuse continues to be a small body of literature that largely lacks coherence in definition and measurement of abuse severity. Results of a recent survey of professionals from across the nation, however, indicate that there does appear to be agreement among researchers and clinicians regarding what is more versus less severe abusive behavior (Chaffin et al., 1997). On the basis of these results and in response to the need for the development of valid and reliable instruments for measuring abuse severity, scales for the Abuse Dimensions Inventory (ADI) were developed by Chaffin et al. (1997). Like the CNI neglect measure (Trocme', 1996), the ADI provides a measure of the level of abuse severity using the most severe abusive incident. The ADI is unique to other methods of measuring abuse severity in that it measures the severity of parental abuse behavior rather than injury severity.

Child and Perpetrator Characteristics Related to Severity. The existing body of severity research is comprised of studies that examine the relationship between child physical abuse injury and demographic characteristics of the child and/or perpetrator. Considerable agreement exists in the severity literature that injuries resulting from incidents of child physical abuse are more severe when the perpetrator is male (Hegar et al., 1994; Rosenthal, 1988) and when the child is younger (Daley & Piliavin, 1982; Rosenthal, 1988). Beyond these two findings, however, the relationship between severity of physical abuse and other variables is less clear. Multivariate severity studies have not generally demonstrated a relationship between gender of the child and abuse severity (Zuravin et al., 1994), although one study did report an interaction effect between genders of the child and the perpetrator

(Rosenthal, 1988). Findings regarding race of the child in relation to severity of abuse must also be interpreted cautiously. Some research has found that African American children are overrepresented among child abuse fatalities, however, this relationship requires further investigation since some studies have failed to control for the effects of social class (Hegar et al., 1994). Additionally, little is known about how a perpetrator's relationship to the child relates to severity of abuse. It is clear that parents are the most frequent abusers, but many studies have failed to distinguish between biological parents, stepparents, parents' lovers, and foster parents. As a result, findings may more accurately reflect proximity or access to the child, rather than kinship (Hegar et al., 1994). The only consistent findings regarding perpetrator's relationship currently continue to be the identification of caregivers as the most frequent abusers.

Taken as a whole, the literature on child physical abuse severity clearly indicates that further research is warranted. The empirical literature is just beginning to uncover the factors that correlate with and predict severity of physical abuse. With the exception of demographic characteristics, such as child's age and perpetrator's gender, the relationship between other factors and severity of abuse have yet to be answered satisfactorily (Hegar et al., 1994). To date, there have been no studies that have examined the relationships between severity of physical abuse behavior and parental risk factors such as substance abuse, despite considerable research that has identified a relationship between these factors and child physical abuse.

Purpose of Study

The purpose of this study was to investigate the relationship between parental substance use and several physical abuse outcomes: 1) severity of physical abuse behavior; and 2) degree of risk to engage in future abuse. This study contributes to empirical knowledge about physical abuse severity through examining severity of parental physical abuse behavior, as opposed to severity of physical abuse injury to the child, as an outcome. Existing knowledge about the relationship between substance use and risk for child physical abuse is also furthered through examination of a dose-effect relationship between substance use and the aforementioned outcome variables. Such evidence would lend further support to the hypothesis of substance abuse as a causal factor for child physical abuse.

Hypotheses

On the basis of existing research and theory, the following hypotheses regarding the relationship between parental substance use and child physical abuse were proposed for testing:

Hypothesis 1: A positive, linear relationship (e.g., dose-effect relationship) exists between DSM-III substance-related disorder symptoms (e.g., alcohol- and drug-related symptoms) and the severity of child physical abuse behavior among abusive parents.

Hypothesis 2: Severity of child physical abuse behavior differs among parents meeting DSM-III diagnostic criteria of a substance dependence disorder, parents who meet diagnostic criteria of a substance abuse disorder, and those who do not meet criteria for a substance use diagnosis. Group order for severity of abuse behavior is:

substance dependence (with or without abuse) > substance abuse (without dependence) > no diagnosis.

Note: The differences between the substance-related disorders were hypothesized on the basis of the distinct differences in severity among them. Substance *abuse* is characterized by the presence of at least one specific symptom which indicates that substance use has interfered with the person's life (e.g., failure to fulfill major role obligations, substance-related legal problems, use in physically hazardous situations, use despite having persistent or recurrent social or interpersonal problems caused by the effects of the substance). Substance *dependence* is a more severe substance-related diagnosis than substance abuse and requires a pattern of use manifested by three or more symptoms that have led to significant impairment or distress. The symptoms of tolerance and withdrawal are often emphasized in definitions of dependence and clearly distinguish it from the less severe diagnosis of substance abuse. Other dependence symptoms include: 1) taking larger amounts over a longer period than was intended; 2) a persistent desire or unsuccessful efforts to cut down or control use; 3) spending large amounts of time in activities necessary to obtain, use, or recover from effects of the substance; 4) giving up or reducing activities because of substance use; 5) continuing use despite knowledge that it may be causing or exacerbating physical or psychological problems.

Hypothesis 3: There is a positive, linear relationship (e.g., dose-effect relationship) between DSM-III substance-related disorder symptoms and the risk to engage in future child physical abuse among abusive parents.

Hypothesis 4: Based on the rationale provided for Hypothesis 2 regarding distinct differences in severity among substance-related disorders, it was hypothesized that risk to engage in future abuse differs among parents meeting DSM-III diagnostic criteria of a substance dependence disorder, parents who meet diagnostic criteria of a substance abuse disorder, and those who do not meet criteria for a substance use diagnosis. Group order for the degree of risk for future abuse is: substance dependence (with or without abuse) > substance abuse (without dependence) > no diagnosis.

Method

Participants

The original sample consisted of 83 physically abusive parents who participated in a clinical trial for physically abusive parents and their children conducted at a children's hospital. Participants were referred to the study by Child Protective Services (CPS) after a finding of confirmed or probable child physical abuse. The current study utilized pretreatment data collected for the clinical trial. Parents who were referred and completed a pre-treatment assessment were included in the sample.

Eligibility for inclusion in the study was determined based on the following criteria:

1. The index abuse event involved a confirmed case of parent-child physical abuse (including stepparents and others in a clear parenting role to the child).
2. The index event involved a child between the ages of 4 and 12.
3. The most recent incident of physical abuse occurred no longer than six months prior to referral.
4. Neither parent was confirmed as sexually abusive.
5. There was either ongoing regular contact or potential regular contact between the child and the abusive parent. Both the abusive parent and the abused child were available for participation. No termination of parental rights petition was pending.
6. The abusive parent had a measured IQ score of at least 70.

Informed consent was obtained from each participant at the time of his or her agreement to participant in the study. Participation in the study was voluntary.

Of the 83 abusive parents who agreed to participate in the study, 21 parents were excluded from the final analyses based on their CAPI scores, which indicated that their responses were invalid. Nineteen of the invalid cases were due to parents attempting to present themselves in an overly positive light, one was a result of random responding by the parent, and one was due to the majority of the instrument being left incomplete.

The final sample for the study consisted of 62 abusive parents, of which, 41 were female (66%) and 21 were male (34%). The parents ranged in age from 21 to 63 years (M=34.05; SD=8.76), and the racial/ethnic composition of the sample was as follows: 48% White, 37% African American, 8% Hispanic, 5% American Indian, and 2% Asian. The sample consisted of 60% biological mothers, 21% biological fathers, 9% stepparents, 5% parents' partners, and 5% grandparents. Seventy-three percent of parents in the sample had received a high school diploma/GED, with some holding higher levels of education, and 68% were employed outside of the home. Refer to Tables 1 and 2 for further description of the sample's demographic characteristics.

Procedures

Following referral to the clinical trial by the county CPS, the project case manager/home visitor contacted the prospective participant by phone, letter, or home visit. A face-to-face meeting was requested in which staff explained the nature of the research project, the informed consent form, conformance with State mandatory reporting laws, and solicited the prospective participant's agreement to participate.

Informed consent was obtained from all parents who met inclusion criteria and agreed to participate. An appointment for pre-treatment assessment was then scheduled by the case manager/home visitor. All assessments were completed at the hospital and included both the abusive parent and an identified child in the family. A variety of structured interviews and questionnaires, as well as parent-child observations, were completed by the parent and child as part of the overall treatment-outcome study. A portion of the abusive parent's pre-treatment data was utilized for the purpose of the current study (i.e., Diagnostic Interview Schedule - Alcohol Module, Diagnostic Interview Schedule – Drug Module, CAPI, and CCAN Demographic Questionnaire).

Instruments

Instruments for the independent variables addressed alcohol and drug use, and the dependent measures assessed severity of the parent's child physical abuse behavior and risk for future abuse. Demographic information was obtained for the purpose of describing the characteristics of the sample. Instruments listed by domain are depicted in Table 3.

Demographic/Social

CCAN Demographic Questionnaire. This 55-item, self-report questionnaire assesses a number of demographic and social ecology variables: ethnicity, household composition, family income, educational level of parent and lifestyle of family members. Examination of temporal stability over a 2-week or less time interval found satisfactory test-retest reliability for the instrument (M. J. Chaffin, personal communication, February 5, 2001). For ordinal or ratio level data items, the mean test-retest correlation was 0.74. For nominal level items the mean Kappa was 0.79.

Measures of Independent Variables

Substance Use

Diagnostic Interview Schedule (DIS) – Alcohol and Drug Modules. The DIS (Robins, Helzer, Croughan, & Ratcliff, 1981) is a structured interview that uses diagnostic algorithms to derive lifetime and current psychiatric diagnoses according to Diagnostic and Statistical Manual of Mental Disorders, third edition (DSM-III), criteria. In addition to deriving a diagnosis, the number of symptoms endorsed for each disorder by the respondent can also be calculated. Items are answered in a forced-choice, yes/no format and are presented in lifetime (e.g., ever happened) and past three months formats. Given the minor differences between the DSM-III and DSM-IV for the diagnosis of substance-related disorders, the DSM-III version of the DIS remains a useful diagnostic instrument.

Previous research has demonstrated the reliability of the DIS in the detection of alcohol and drug disorders. Several studies have compared independent administrations of the DIS by lay interviewers to administrations by psychiatrists (Helzer, Robins, McEvoy, Spitznagle, Stoltzman, Farmer, & Brockington, 1985; Robins et al., 1981). In one study an inter-rater agreement rate of 0.86 was obtained for the alcohol module and 0.73 for the drug module (Robins et al., 1981). Using a sample of community residents, Helzer et al. (1985) obtained Kappa coefficients of 0.68 for diagnosis of alcohol abuse or dependence and 0.70 for diagnosis of drug abuse or dependence. The results of these studies and others reflect a fair to good level of diagnostic agreement between lay interviewers and psychiatrists using the DIS to diagnose alcohol and drug disorders.

The validity of the DIS for detecting alcohol and drug disorders is supported by research demonstrating diagnostic agreement with standardized psychiatric diagnoses. Diagnoses made by the lay DIS method and a standardized psychiatric diagnosis by a psychiatrist have found 92% (Kappa = .68) agreement for the diagnosis of alcohol-use disorders (abuse and dependence combined) and 97% agreement (Kappa = .70) for drug-use diagnoses (Helzer et al., 1985). The DIS has also been compared to other similar instruments. Comparison of DIS diagnoses to the Schedule for Affective Disorders and Schizophrenia—Lifetime (SADS-L) diagnoses found a Kappa value of 0.66 using a sample of patients in alcohol rehabilitation (Hasin and Grant, 1987).

The DIS modules pertaining to alcohol and drug use were utilized for the current study. Data from the DIS – Alcohol and Drug Modules were collected from the abusive parent. The DIS interviews were conducted by masters and doctoral level students who had received instruction in conducting the interviews and in completing the DIS.

Measures of Dependent Variables

Abuse Characteristics/Severity

Abuse Dimensions Inventory (ADI). The ADI (Chaffin et al., 1997) is an ordinal measure designed to measure the severity of sexual and/or physical abuse across several dimensions (e.g., type/extent of abuse, duration, relationship between abuser and victim, use of force/coercion, and reaction of abuser). The physical abuse section has scales measuring physical abuse behavior severity, duration of abuse, number of most severely rated injuries, and number of total incidents.

Severity rankings for the ADI were developed based on a national survey of professionals working in the field of child abuse. The instrument has been shown to have good overall mean inter-rater reliability (Kappa = 0.94), and inter-rater reliability of 0.99 has been demonstrated for the physical abuse behavior scale (Chaffin et al., 1997). A factor analysis examining the construct validity of the instrument yielded a four-factor model (abuse behavior, duration/frequency, coercion, behavioral severity) that explained 64% of the variance (Chaffin et al., 1997). As expected, physical and sexual abuse items loaded on separate factors.

The physical abuse behavior severity scale was used for the current study. Data for the ADI was obtained through a telephone interview with the CPS caseworker at the time of referral for each family and through subsequent review of the family's CPS case records. The ADI was completed by masters and doctoral level students, who were trained in conducting the interviews and in completing the ADI. In order to determine inter-rater reliability for ADI ratings in the study, 10% of the 83 families included in the original sample were randomly selected and the ADI was re-coded by an independent rater. The mean inter-rater reliability for ADI coding for the current study was Kappa = 0.80.

Risk for Future Abuse

Child Abuse Potential Inventory (CAPI). The CAPI (Milner, 1986) is a well known and widely used 160-item, self-report tool used to screen for child physical abuse potential (e.g., risk for abuse). Items are answered in a forced-choice, agree-disagree format. The inventory contains an Abuse scale that consists of 77 weighted items that are summed to provide an abuse score. Items comprising the Abuse scale

can be further broken down into six descriptive factor scales (e.g., Distress, Rigidity, Unhappiness, Problems with Child and Self, Problems with Family, and Problems from Others) and two special scales (e.g., Ego Strength and Loneliness). The CAPI also contains three validity scales (Lie scale, Random Response scale and Inconsistency scale) that are used to produce three response distortion indexes: the faking-good index, faking-bad index, and the inconsistency index.

Studies examining the psychometric properties of the CAPI show that it has good internal consistency reliability and temporal stability. Split-halves and Kuder-Richardson-20 (KR-20) internal consistency estimates reported in the technical manual indicate high internal consistency coefficients across non-abusive control groups (0.92 to 0.96) and abuse groups (0.95 to 0.98) (Milner, 1986). KR-20 reliability estimates are reported at 0.94 for child physical abusers and 0.92 for non-physically abusive comparison parents (Milner & Robertson, 1990). Similar values were obtained for other subgroups drawn from the abusive and nonabusive groups. Internal consistency estimates for the factor and validity scales are lower relative to the high levels reported for the CAPI-Abuse scale, however, they are in acceptable ranges (Milner, 1986). In regard to temporal stability, test-retest reliabilities were obtained for 1-day, 1-week, 1-month, and 3-month intervals for the Abuse scale using male and female groups from the general population. The reported Abuse scale test-retest reliabilities were 0.91, 0.90, 0.83, and 0.75, respectively, and did not appear to be systematically influenced by gender, age, educational level, and ethnic background (Milner, 1986).

A number of studies have also examined the validity of CAPI. The instrument's content validity is supported by the procedures used to define the content domain and to develop the original item pool (Milner, 1986). Numerous construct validity studies on the Abuse scale have been published and are summarized in the technical manual. Collectively, these studies indicate that the Abuse scale is measuring constructs thought to be related to child physical abuse (Milner, 1986). The CAPI has been shown to discriminate between groups of physical abusers, neglectful parents, at-risk parents, and comparison subjects (Milner, 1986; Milner & Robertson, 1990). Good predictive validity for the CAPI is indicated by a significant relationship between elevated abuse scores and later confirmed child physical abuse found among a group of at-risk parents (Milner, Gold, Ayoub, & Jacewitz, 1984). Significant relationships were also found between each of the six Abuse scale factor scales and later physical abuse.

Results

Physical Abuse Behavior Severity

The relationship between DSM-III substance-related disorder symptoms (e.g., alcohol and drug symptoms) and the severity of physical abuse behavior toward children among abusive parents was assessed through use of the Diagnostic Interview Schedule – Drug Module (DIS-Drug), Diagnostic Interview Schedule – Alcohol Module (DIS-Alcohol) and the Abuse Dimensions Inventory (ADI). Due to the highly skewed nature of distributions for the DIS-Alcohol and DIS-Drug data and difficulties with adequately correcting the distributions through transformation, the data for each of these ordinal variables was collapsed into categories for analysis (i.e.,

two or more substance-related disorder symptoms, less than two symptoms). Cell means and standard deviations for the DIS-Drug and DIS-Alcohol on the ADI are listed in Table 4. Given the small number of participants in three of the four cells, it is important to note that cell distributions were normal, skew and kurtosis were within acceptable limits, and no outliers were identified.

To address hypothesis 1, an analysis of variance (ANOVA) was conducted to examine the relationship between severity of physical abuse behavior and substance-related disorder symptoms among abusive parents. Results failed to identify differences in severity of parent's physical abuse behavior based upon the presence or absence of substance-related disorder symptoms (See Table 5). The independent effects of drug- and alcohol-related symptoms were examined, as well as their combined effect; nevertheless, no significant findings were revealed. To further examine the main effects while preserving all variability in the data, Pearson correlations were computed. Consistent with results of the ANOVA, no significant relationships were identified (See Table 6). Thus, the hypothesis that a dose-effect relationship exists between DSM-III substance-related disorder symptoms and severity of physical abuse behavior toward children among abusive parents was not supported by either analysis.

Unfortunately, the composition of the data set did not allow examination of hypothesis 2, which proposed that severity of physical abuse behavior would differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who met criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis. The number of parents who

met criteria for one or more of the diagnostic groups was too small to allow the analysis. Consideration was given to collapsing the abuse and dependence diagnostic categories into a broad substance-related disorder category for comparison to a no substance-related disorder group; however, it was the opinion of the author that such an analysis would not provide unique information beyond that provided by the aforementioned ANOVA.

Risk for Child Physical Abuse in the Future

The relationship between DSM-III substance-related disorder symptoms (e.g., alcohol and drug symptoms) and the degree of risk among abusive parents to engage in child physical abuse in the future was assessed through the use of the DIS-Drug, DIS-Alcohol and the Child Abuse Potential Inventory (CAPI)-Abuse scale. As previously mentioned, the data from the DIS-Drug and DIS-Alcohol measures was collapsed into categories for analysis (i.e., two or more substance-related disorder symptoms, less than two symptoms) due to the highly skewed nature of the distributions of the data. Cell means and standard deviations for the DIS-Drug and DIS-Alcohol on the CAPI-Abuse scale are listed in Table 7. As was true for the analysis of abuse behavior severity, the number of participants in three of the four cells for this analysis was small. Examination of cell distributions indicated that distributions were normal, skew and kurtosis were within acceptable limits, and no outliers were identified; nevertheless, these small cell sizes should be considered when reviewing the results.

To address hypothesis 3, an analysis of variance (ANOVA) was conducted to examine the relationship between substance-related disorder symptoms and risk for

future child physical abuse among abusive parents. Results yielded a significant interaction effect between alcohol and drug symptoms in regard to risk for future child physical abuse among parents [$F(1,58) = 5.897$, $p = .018$] (See Table 8). As shown in Illustrations 1 and 2, results suggest that parents who met diagnostic criteria for both two or more alcohol-related disorder symptoms and two or more drug-related disorder symptoms (e.g., polysubstance use) were at greater risk for engaging in future physical abuse than other parents in the sample, including those who met criteria for two or more symptoms of *either* a drug- or alcohol-related disorder. The alcohol disorder symptoms most commonly reported by participants were: 1) getting into physical fights while drinking; 2) having blackouts due to drinking; and 3) driving difficulties due to drinking (e.g., having an accident and/or being arrested for drunk driving). The most frequently endorsed drug disorder symptoms were: 1) using one or more drugs every day for two weeks or more; 2) using any drug(s) enough so that you felt like you needed it or were dependent on it; 3) drug use that caused considerable problems with family, friends, on the job, at school, or with the police; and 4) experiencing emotional/psychological problems from using drugs—such as feeling crazy, paranoid, depressed, or uninterested in things. In regard to the types of drugs used by participants, of the 11 who reported drug use in the past three months, 10 reported cannabis use and one participant reported combined use of cannabis, cocaine, and amphetamines.

Aside from the significant alcohol x drug interaction effect, no other relationships were identified (See Table 8). Pearson correlations were also computed to further explore the independent relationships of alcohol- and drug-related

symptoms with risk of future abuse while preserving all variability in the data. No significant relationships were identified, which is consistent with results of the aforementioned ANOVA (See Table 9). Of note, however, is that the mean CAPI-Abuse scale scores for three of the four groups examined by the ANOVA were above the signal detection cut-off score of 166 (i.e., clinically elevated). Furthermore, the mean CAPI-Abuse scale score for the alcohol x drug interaction group was elevated above the more conservative clinical cut-off score of 215, suggesting that participants in this group are at greater risk for abuse than those in other groups. Group means are presented in Illustration 2.

To shed further light on the alcohol x drug interaction effect noted above, a multivariate analysis of variance (MANOVA) was conducted to examine the six subscales that comprise the CAPI-Abuse scale (e.g., Distress, Rigidity, Unhappiness, Problems with Child and Self, Problems with Family, Problems from Others) in relation to alcohol- and drug-related symptoms. Although the multivariate analysis did not yield significant findings, univariate results were reviewed and are presented as a follow-up analysis to the finding of a significant interaction effect for the overall CAPI-Abuse scale. Results of the MANOVA revealed a significant interaction effect for the Distress and Unhappiness subscales [$F_{Distress}(1,58) = 4.759$, $p = .033$; $F_{Unhappiness}(1,58) = 4.070$, $p = .048$] (See Table 10). The presence of both drug- and alcohol-related disorder symptoms (2 or more symptoms of each) was related to higher scores on these two subscales, compared to other subscales. It should be noted, however, that results of a cross-validation study conducted on the CAPI indicated that the highest interfactor correlation was between the Distress and

Unhappiness factors. These factors had 34% common variance, and minimal to moderate sized intercorrelations were also identified among the other subscales. Nevertheless, the author notes that the six factors generated from the CAPI-Abuse scale provide descriptive constructs which are relatively independent (Milner, 1986). According to the CAPI Interpretive Manual, the Distress subscale represents a general theme of perceived personal distress that is relatively specific to personal adjustment problems that result from parenting stress and appears related to abusive behavior. Examples of items from the Distress subscale are "I am often upset and do not know why" and "Sometimes I feel all alone in the world" (Milner, 1986). The Unhappiness subscale describes a general unhappiness with life and a specific unhappiness related to problems in interpersonal relationships, which contribute to the likelihood of difficulties in the parent's interactions with children (Milner, 1990). Examples of items from the Unhappiness subscale are "I am an unlucky person" and "I do not laugh very much" (Milner, 1986). Taken together, the elevations on the Distress and Unhappiness subscales for the current sample suggest that these parents are experiencing a high degree of personal distress, personal adjustment problems, and general unhappiness with life (Milner, 1990). Means and standard deviations for the six CAPI-Abuse subscales are presented in Table 11.

Due to significant overlap among items comprising the CAPI-Abuse subscales and items for the special scales, a separate MANOVA was computed to examine the relationships of the special scales to drug- and alcohol-related disorder symptoms. The multivariate analysis yielded significant overall findings for the alcohol x drug interaction [$F(2,57) = 3.26$, $p = .046$]. As presented in Table 12, examination of

univariate results revealed a significant interaction effect for both the Ego Strength and the Loneliness subscales [$F_{Ego}(1,58) = 6.11$, $p = .016$; $F_{Loneliness}(1,58) = 6.40$, $p = .014$.]. Participants reporting two or more symptoms of both alcohol- and drug-related disorders scored higher on the Loneliness subscale compared to other participants and lower than others on the Ego Strength subscale (See Table 13). This pattern of results suggests that, in comparison to other participants, these parents are likely to have perceptions of being isolated and alone, as well as to feel depressed and upset, without knowing why (Milner, 1990). Specifically, the Loneliness subscale measures the degree of the parent's perceived loneliness rather than actual degree of social isolation and provides a measure of the parent's view of the available social support. Examples of items from the Loneliness subscale are "People have caused me a lot of pain" and "These days a person doesn't really know on whom one can count" (Milner, 1986). The Ego Strength subscale provides a measure of the parent's perceptions of his/her personal and interpersonal emotional stability (Milner, 1990). Examples of items from the Ego Strength subscale are "I sometimes worry that I cannot meet the needs of a child" and "Sometimes I do not like the way I act" (Milner, 1986).

In regard to hypothesis 4, which proposed that the risk for future physical abuse would differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who met criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis, the composition of the data set did not allow the analysis to test this hypothesis. As

previously mentioned, the number of parents who met criteria for one or more of these diagnostic groups was too small to allow analysis by diagnosis.

Discussion

The present study was designed to examine the relationship between parental substance use and several child physical abuse outcomes in a sample of physically abusive parents. Outcomes examined were severity of parental child physical abuse behavior and degree of risk to engage in future abuse. Overall, results were not indicative of a dose-effect relationship between substance use and severity of physical abuse behavior. However, results did suggest a trend in which parents who reported two or more symptoms of both alcohol- and drug-related disorders were at greater risk to engage in future child physical abuse. The small number of participants in three of the four groups for the analyses, however, should be taken into account when considering the current findings.

Severity of Child Physical Abuse Behavior

The severity of physical abuse behavior by parents in the sample did not appear to differ based on the presence or absence of drug- and/or alcohol-related disorder symptoms. Given that cannabis was reported as the type of drug used by the participants who admitted drug use, it is not surprising that increases in drug-related disorder symptoms did not relate to increases in abuse severity. Research that has examined the relationship between violence and cannabis indicates that it at least as likely to reduce violent impulses as to increase them (Grinspoon & Bakalar, 1985; Taylor & Leonard, 1983), so it would be unlikely for a dose-effect relationship to exist between cannabis abuse and physical abuse severity in this sample of

participants. On the other hand, the non-significant relationship between severity of abuse behavior and alcohol-related disorder symptoms is somewhat surprising, since alcohol is the substance most consistently associated with violence (Cohen, 1985). The nature of this association, however, remains unclear. Research has not yet ascertained the extent to which the association is due to the direct effect of alcohol or to a link between alcohol use and other factors associated with violence (Moeller et al., 1998). If the relationship is one in which alcohol is related to violence through a link with other factors, the absence of these factors could account for the non-significant findings.

Risk for Future Abuse

Although the pattern of current findings is also not indicative of a dose-effect for substance abuse and risk of future abuse, the combination of two or more alcohol-related disorder symptoms and two or more drug-related disorder symptoms appeared to increase the risk for future child abuse among parents in the sample. The mean CAPI-Abuse scale score for parents who reported the presence of both alcohol- and drug-related symptoms ($\geq$ 2 symptoms of each) was higher than mean scores for the other three groups, and this was the only group mean that exceeded the scale's clinical cut-off score of 215. Although the present findings must be interpreted cautiously due to the small number of participants in several of the cells, the general pattern of results is consistent with previous research on substance abusers that reported higher levels of aggression among polysubstance users, regardless of the substances used (McCormick & Smith, 1995). Results are not consistent with Famularo et al.'s (1992) research which indicated that polysubstance abuse did not

contribute any additional predictive value to the effects of alcohol in predicting physical abuse, however, these were novel findings that have not since been replicated.

Differences in group means on subscales of the CAPI shed further light on the factors that may account for the unique relationship between parents with symptoms of polysubstance abuse and degree of risk for child physical abuse. Results suggest that parents in the alcohol x drug interaction group were experiencing higher levels of psychological distress than other parents in the sample (e.g., higher personal distress and adjustment problems, greater general unhappiness with life, greater perceived loneliness, and lower ego-strength). There were no differences among the four groups on factors such as rigidity of parenting attitudes, negative perceptions of child(ren), family problems, or general difficulties in social relationships. These findings suggest that the increased risk for abuse found in parents who reported symptoms of polysubstance abuse is driven by their increased levels of personal distress (i.e., suggesting that increased personal distress increases risk for physical abuse).

These results are consistent with previous research that has identified both personal distress and substance abuse as risk factors for physical abuse (Ammerman et al., 1999; Chaffin et al., 1996). The findings offer additional support for recent research conducted with the CAPI that examined child abuse potential in parents with histories of substance use disorders (Ammerman et al., 1999). The major conclusion of the study was that histories of substance use disorders among parents increase abuse potential; however, the authors also identified that emotional dysregulation,

among both mothers and fathers, predicted CAPI-Abuse Scale scores. The authors proposed that emotional distress may represent a common underpinning of both dysfunctional parenting and substance use problems, and emotional dysregulation may contribute to both substance use disorders and abuse potential.

In light of this research, it is somewhat surprising that the group of parents who reported two or more alcohol-related disorder symptoms had the lowest mean score on the CAPI-Abuse scale. This is inconsistent with Ammerman et al.'s (1999) findings of increased child abuse potential, in general, among parents with histories of substance use disorders compared to parents with no history (Ammerman et al., 1999), and it is unclear as to why this may have occurred. Review of the drug- and alcohol-related symptoms most often reported by parents in the sample identified differences in the nature of symptoms reported by those abusing alcohol compared to those abusing drugs. For instance, the alcohol symptoms most frequently reported related to impairments in functioning, such as blackouts and driving problems, and getting into physical fights with others while drinking. In contrast, the most commonly endorsed drug symptoms related to drug dependency, emotional disturbances, and problems with family, friends, etc., due to drug use. Although interpersonal difficulties were noted for both drug and alcohol abuse, the psychological difficulties and substance dependency reported by drug users are quite different from the nature of symptoms reported by those abusing alcohol and could account for differences in the results.

Limitations

The findings from this study must be considered within the context of several methodological limitations. The generalizability of the present findings to the population of physically abusive parents is limited by the nonrandomized sample of parents who completed the measures. Participants were recruited after being referred by CPS to a treatment-outcome project, so these findings are subject to any biases that might be present in the way cases are detected and referred to CPS. Additionally, the parents participated on a volunteer basis. The dependence on CPS for referrals to the study and the inclusion criteria for the study may have limited the range of abuse behavior in the sample as well. For instance, parents who no longer had contact with the children they abused were excluded from the study due the necessity of ongoing parent-child contact for the purposes of the treatment-outcome study. In addition, the data was collected in a metropolitan medical center that serves a predominantly lower socioeconomic population. Sixty-one percent of the families in this study earned incomes below $15,000 per year and 63% relied upon public assistance.

The small number of participants in the sample who reported two or more substance-related disorder symptoms is also a clear limitation of the study. Although examination of cell distributions indicates that the data is normally distributed within cells, the small number participants in three of the four cells increases the threat of Type II error. Of less concern is the risk of Type I error, which was controlled by alpha to minimize the possibility of erroneously finding significant results. Given these small cell sizes, the greater risk is one of failing to detect significant differences among the groups. As a result, a dose-effect relationship between parental substance

use and severity of child physical abuse cannot be entirely ruled out, and there is a risk that additional group differences were not detected. Additional research with larger, more representative samples should be conducted in this area to further investigate these relationships.

Finally, self-report biases could also affect the study. Given the sensitive nature of the information requested of parents and the fact that they were involved with CPS, they may have been hesitant to reveal in full the nature and severity of their substance use, as well as attitudes and behaviors related to risk for abuse. So, although the data of parents who presented themselves in an overly positive light on the CAPI was excluded, underreporting remains a potential problem in the sample. Since social desirability would decrease the obtained rates of substance-related disorder symptoms and level of risk for abuse, the effect on the study would be a conservative one. Future studies in this area should seek to identify additional means of obtaining information about parental substance use and abuse-related attitudes and behaviors that do not rely entirely upon self-report.

Conclusions and Future Directions

Despite the aforementioned limitations, results of the study suggest a unique relationship between polysubstance abuse and degree of risk for child physical abuse that appears to be driven by factors related to increased parental distress. This is consistent with previous research that has identified both substance abuse and personal distress as risk factors for physical abuse (Ammerman et al., 1999; Chaffin et al., 1996), as well as with Ammerman et al.'s (1999) proposal that emotional distress may contribute to both substance-related disorders and abuse potential.

These findings shed additional light on the possible nature of the relationship between substance abuse and risk for child abuse and should be explored further in the future.

Although the current results to not support a dose-effect relationship between parental substance use and severity of physical abuse behavior, this study was the first to examine the relationship between parental risk factors, such as substance abuse, and severity of physical abuse behavior. Thus, this area awaits further research, especially given the small cell sizes for several groups in the current study. Such research should include a larger, more representative sample of participants in order to obtain a broader range of substance use and abuse behavior severity in the sample. Ideally, future studies should examine relationships between physical abuse and specific types of drugs independently since some drugs appear more likely than others to increase the likelihood of aggressive behavior. A larger sample size might also allow the comparison of the various substance-related diagnostic groups as proposed for the current study but unable to conduct.

To overcome some of the aforementioned limitations, perhaps future studies could pursue data collection from multiple CPS agencies (e.g., a multi-site study) in order to obtain the larger, more representative sample suggested to allow analysis by drug type and diagnostic group. Such a sample could also provide access to a broader range of abuse behavior and cases could be randomly selected from each agency's population of confirmed physical abuse cases. To decrease the potential impact of self-reporting biases, honest reporting of substance use and abuse-related attitudes and behaviors could be encouraged by obtaining information though audio and/or computer-assisted interviews, as opposed to a face-to-face interview, since some

participants may be less comfortable disclosing sensitive information in a face-to-face format. Studies examining other types of risk behaviors have found increased reporting of risk behaviors when audio and/or computer-assisted interviews were used, as opposed to face-to-face interviews or written questionnaires (Boekeloo, Schiavo, Rabin, Conlon, Jordan, & Mundt, 1994; Turner, Ku, Rogers, Lindberg, Pleck, & Sonenstein, 1998). Review of CPS case records could also provide an additional source of information about parental substance use. Substance use is sometimes indicated as a reason for referral to CPS and confirmed through CPS investigation, so this information could be collected as an additional data source for information regarding parental substance use.

A number of unanswered questions remain in regard to the nature of the relationship between parental substance use and child physical abuse. Nevertheless, the current study contributes to existing research by shedding additional light on the association between substance abuse and risk for child physical abuse. The results appear consistent with recent models of child abuse that have conceptualized the association between substance abuse and child physical abuse as complex and multifactorial (see Sheridan, 1995), and the findings suggest ideas for future research to examine the interaction between variables such as personal distress, substance abuse, and physical abuse to further clarify the sequelae of child physical abuse.

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Table 1

Demographic Features of Abusive Caregivers In the Sample (N = 62)

		Frequency	Percent
Age	Range = 21 - 63 Mean = 34.05 SD = 8.76		
Gender			
Female		41	66.1
Male		21	33.9
Race/Ethnicity			
Euro-American		30	48.4
African American		23	37.1
Hispanic		5	8.1
American Indian		3	4.8
Asian		1	1.6
Highest Level of Education Completed			
Less Than 12th Grade		16	25.8
High School Diploma/GED		20	32.3
Some College (no degree)		14	22.6
Vo-Tech School		9	14.5
College Degree or Higher		2	3.2
Not Reported		1	1.6
Marital Status			
Married		18	29.0
Never Married		18	29.0
Divorced		12	19.4
Separated		9	14.5
Live Together		5	8.1
Caregiver Role			
Biological Mother		37	59.7
Biological Father		13	21.0
Stepparent		6	9.7
Parent's Partner		3	4.8
Grandparent		3	4.8

Table 2

Demographic Features of Households In the Sample (N = 62)

	Frequency	Percent
Number of Children Living in Household		
None	15	24.2
One	11	17.7
Two	14	22.6
Three	14	22.6
Four or More	8	12.9
Household Earnings Per Month		
Less than $599	17	27.4
$600 - $1249	21	33.9
$1250 - $2099	12	19.4
$2100 - $3349	4	6.4
More than $3350	6	9.7
Not Reported	2	3.2
Public Assistance Received		
Receive Assistance	39	62.9
No Public Assistance	23	37.1

Table 3

Independent and Dependent Measures Listed by Domain and Data Source

		Parent Report	CPS Report
Independent Measures			
	Demographics	CCAN Demographic Questionnaire	
	Substance Use	DIS – Alcohol DIS – Drug	
Dependent Measures			
	Abuse Behavior Severity		ADI
	Risk for Future Abuse	CAPI	

Table 4

Descriptive Statistics for ADI Based Upon Level of Independent Variables

Level of Independent Variables	N	Mean	Standard Deviation
Two or More Alcohol Disorder Symptoms Only	9	4.33	1.80
Two or More Drug Disorder Symptoms Only	9	4.78	2.33
Two or More Alcohol Disorder Symptoms and Drug Disorder Symptoms	6	4.67	2.34
Neither Two or More Alcohol Disorder Symptoms nor Drug Disorder Symptoms	38	4.92	1.58

Table 5

Analysis of Variance (ANOVA) for Abuse Behavior Severity (ADI)

Variable	Mean Square	F	Signif.
2 or More Alcohol Symptoms	1.18	.36	.55
2 or More Drug Symptoms	.09	.03	.87
Alcohol x Drug Interaction	.55	.17	.68

Table 6

Pearson Correlations for Abuse Behavior Severity (ADI)

Variable	N	Pearson Correlation	Signif.
Alcohol Symptoms	62	-.218	.089
Drug Symptoms	62	.019	.886

Table 7

Descriptive Statistics for CAPI-Abuse Scale Based Upon Level of Independent Variables

Level of Independent Variables	N	Mean	Standard Deviation
Two or More Alcohol Disorder Symptoms Only	9	139.78	65.41
Two or More Drug Disorder Symptoms Only	9	172.67	70.46
Two or More Alcohol Disorder Symptoms and Drug Disorder Symptoms	6	239.17	118.25
Neither Two or More Alcohol Disorder Symptoms nor Drug Disorder Symptoms	38	210.74	90.60

Table 8

Analysis of Variance (ANOVA) for Risk of Future Abuse (CAPI-Abuse Scale)

Variable	df	F	Signif.
2 or More Alcohol Symptoms	1	.01	.94
2 or More Drug Symptoms	1	1.17	.28
Alcohol x Drug Interaction	1	5.90	.018*

* significant at .025 level (Alpha adjusted using the Bonferroni correction, since two separate ANOVAs were computed.)

Table 9

Pearson Correlations for Risk of Future Abuse (CAPI-Abuse Scale)

Variable	N	Pearson Correlation	Significance
Alcohol Symptoms	62	.017	.898
Drug Symptoms	62	-.031	.813

Table 10

Univariate Findings for MANOVA Examining Relationships Between Alcohol x Drug Interaction and CAPI-Abuse Subscales (N = 62)

CAPI Abuse Subscale	df	F	Sig.	Eta Squared
Distress	1	4.76	.03*	.076
Rigidity	1	1.96	.167	.033
Unhappiness	1	4.07	.048*	.066
Problems with Child and Self	1	.10	.753	.002
Problems with Family	1	.05	.822	.001
Problems from Others	1	2.17	.146	.036

*Significant at .05 level.

Table 11

Means and Standard Deviations for Significant CAPI-Abuse Subscales Based Upon Level of Independent Variables

Subscale	Level of IV	N	Mean	Standard Deviation
Distress				
	≥ 2 Alcohol Disorder Symptoms Only	9	73.11	41.43
	≥ 2 Drug Disorder Symptoms Only	9	105.00	51.86
	≥ 2 Alcohol Disorder and Drug Disorder Symptoms	6	145.50	72.84
	Neither ≥ 2 Alcohol Disorder nor ≥ 2 Drug Disorder Symptoms	38	127.16	73.63
Unhappiness				
	≥ 2 Alcohol Disorder Symptoms Only	9	16.22	14.55
	≥ 2 Drug Disorder Symptoms Only	9	14.44	9.68
	≥ 2 Alcohol Disorder and Drug Disorder Symptoms	6	26.17	18.78
	Neither ≥ 2 Alcohol Disorder nor ≥ 2 Drug Disorder Symptoms	38	22.42	13.57

Table 12

MANOVA Examining Alcohol x Drug Interaction and CAPI–Abuse Special Scales

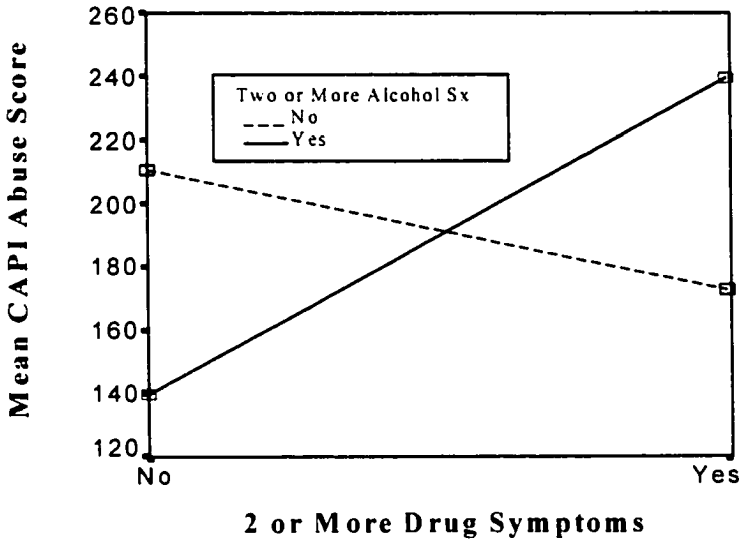
CAPI Subscale	df	F	Sig.	Eta Squared
		Multivariate Effects		
	2	3.26	.046	.103
		Univariate Effects		
Ego-Strength Scale	1	6.11	.016*	.095
Loneliness Scale	1	6.40	.014*	.099

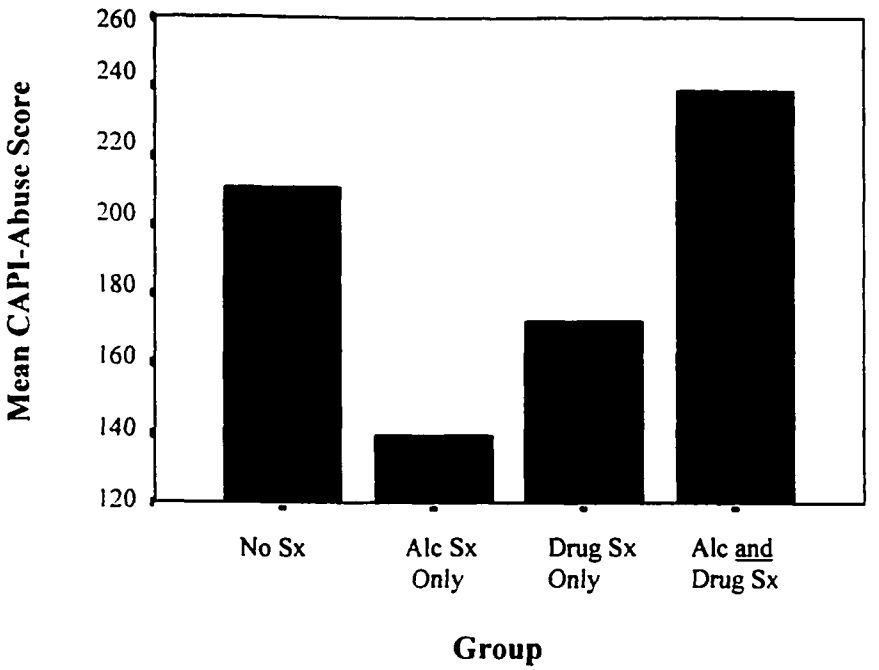
*Significant at .05 level.

Table 13

Means and Standard Deviations for CAPI-Abuse Special Scales Based Upon Level of Independent Variables

Subscale	Level of IV	N	Mean	Standard Deviation
Ego Strength				
	≥ 2 Alcohol Disorder Symptoms Only	9	26.56	6.69
	≥ 2 Drug Disorder Symptoms Only	9	22.56	6.46
	≥ 2 Alcohol Disorder and Drug Disorder Symptoms	6	15.22	11.43
	Neither ≥ 2 Alcohol Disorder nor ≥ 2 Drug Disorder Symptoms	38	19.00	9.93
Loneliness				
	≥ 2 Alcohol Disorder Symptoms Only	9	5.22	3.83
	≥ 2 Drug Disorder Symptoms Only	9	8.11	4.17
	≥ 2 Alcohol Disorder and Drug Disorder Symptoms	6	10.67	5.16
	Neither ≥ 2 Alcohol Disorder nor ≥ 2 Drug Disorder Symptoms	38	9.18	3.81


Mean CAPI Abuse Score
260
240
220
200
180
160
140
120
Two or More Alcohol Sx
No
Yes
No
Yes
2 or More Drug Symptoms


Mean CAPI-Abuse Score
260
240
220
200
180
160
140
120
No Sx
Alc Sx Only
Drug Sx Only
Alc and Drug Sx
Group

Child Physical Abuse: Relationship of Parental Substance Use To Severity of Abuse and Risk for Future Abuse

Introduction

Despite continued efforts toward prevention and remediation, more than a million children in the United States are seriously abused and/or neglected by their parents or guardians each year (McCurdy & Daro, 1994). In 1997, over 3 million children were reported for child maltreatment to child protective service (CPS) agencies and, of these, just under 1,000,000 children were confirmed by CPS as victims of child abuse and neglect (U.S. Department of Health and Human Services, 1999). This translates to a victimization rate of about 14 out of every 1,000 children in the U.S. general population (U. S. Department of Health and Human Services, 1999).

Public awareness and professional response to child maltreatment have increased in recent years, and so, too, has the number of reported incidents of abuse. Child abuse reporting levels increased 41% between 1988 and 1997 (National Committee to Prevent Child Abuse, 1998). Although this statistic is disheartening at first glance, one must be cautious in interpreting it as an actual increase in the occurrence of child abuse and neglect. Much of the increase in reporting is attributed by experts to the increase in public awareness of child maltreatment, greater willingness to report child maltreatment, and changes in how states collected reports of maltreatment (Wang & Daro, 1998). Statistics on the actual number of children who were victims of confirmed or suspected maltreatment reveal that the rate of maltreatment increased between 1990 and 1996 with an overall increase of 18% for

that period (National Clearinghouse on Child Abuse and Neglect). However, this rate declined between 1996 and 1997 from slightly over one million (1,030,751) to just under one million (984,000) (National Clearinghouse on Child Abuse and Neglect). So, although child abuse and neglect continues to be all too common in the United States, it does appear to be on the decline in recent years.

Along with heightened awareness and reporting of child abuse and neglect, increased professional concern has also led to the development of a large body of research examining child maltreatment issues. An abundance of literature on child maltreatment has emerged since Kempe first brought the issue to light through his seminal article on the battered child syndrome in the early 1960s (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962). Within this body of literature, considerable research on child physical abuse has emerged. Child physical abuse, second in prevalence only to neglect, accounts for approximately 25% of reported maltreatment incidents each year (U. S. Department of Health and Human Services, 1999). As a result, one focus of the physical abuse research has been on the identification of risk factors in order to better identify those at risk for physically abusing a child.

Numerous studies have sought to identify characteristics that place parents and/or guardians at risk for physically abusing a child (Berenson, Stiglich, Wilkinson, & Anderson, 1991; Chaffin, Kelleher, & Hollenberg, 1996; Gillham, Tanner, Cheyne, Freeman, Rooney, & Lambie, 1998; Holden & Banez, 1996; Milner, 1992; Milner & Chilamkurti, 1991; Murphy, Jellinek, Quinn, Smith, Poitrast, & Goshko, 1991; Salzinger, Feldman, Hammer, & Rosario, 1991; Wolfner & Gelles, 1993; Zuravin & DiBlasio, 1996). Through these studies, researchers have identified specific social,

biological, cognitive/affective, mental health and behavioral risk factors among parents that increase their risk of engaging in child physical abuse.

Parental substance abuse is one risk factor that is often cited in the literature. It is estimated that 10 million children in the U.S. are raised by substance abusing parents or caretakers and at least 675,000 children every year are seriously mistreated by substance abusing caretakers (National Committee for the Prevention of Child Abuse (NCPCA), 1989). Children of substance-abusing parents are almost three times more likely to be abused than children of parents who are not substance abusers (Reid, Macchetto, & Foster, 1999).

A number of studies have found evidence of a link between substance abuse and child physical abuse (Chaffin et al., 1996; Holmes & Robins, 1988; Kaplan, Pelcovitz, Salzinger, & Ganeles, 1983; Kelleher, Chaffin, Hollenberg, & Fischer, 1994; Kolar, Brown, Haertzen, & Michaelson, 1994; Miller, Smyth, & Mudar, 1999; Whipple & Webster-Stratton, 1991; Windle, Windle, Scheidt, & Miller, 1995). A recent review of the literature afforded the conclusion that substance abuse among parents is related to their perpetration of violence toward children (Miller, Maguin, & Downs, 1997). Previous studies suggest that an estimated 50-80% of all child abuse cases substantiated by CPS involve some degree of parental substance abuse (National Clearinghouse on Child Abuse and Neglect). Furthermore, in a survey of CPS workers 88% of workers named substance abuse as one of the top two problems presented by families reported for maltreatment (National Committee to Prevent Child Abuse, 1998). Parental substance abuse and child abuse clearly co-occur on a frequent basis, and research has led to the conclusion that the two are prospectively

related. However, continued research is needed to clarify this relationship so that the co-occurrence of parental substance abuse and child abuse may be decreased and future incidents of child abuse may be prevented.

Although a number of studies have examined the connection between substance abuse and child physical abuse in regard to *risk* for abuse, little is known about how parental substance abuse relates to *severity* of child physical abuse or to *the risk* for future abuse. Research addressing severity has increased in recent years, however, this body of research continues to be fairly small and many issues remain unexplored. To date, several studies have investigated the relationship between the severity of child physical abuse injury and demographic characteristics of the child and perpetrator (Hegar, Zuravin, & Orme, 1994; Zuravin, Orme, & Hegar, 1994). However, parental substance abuse has not yet been investigated in relation to abuse severity or risk severity.

The purpose of this study is to investigate the dose-effect relationship between parental substance use severity and physical abuse severity, as well as the relationship between severity of parental substance use and risk for future abuse. This study will contribute to the empirical knowledge about physical abuse severity, in addition to furthering existing knowledge about the relationship between substance abuse and risk for child physical abuse. This may be beneficial in several ways. First, current literature clearly supports substance abuse as a risk factor for child physical abuse. However, risk factors are not necessarily causal in nature. If substance abuse is not causally related to child physical abuse, it is relevant for prediction of abuse but not as a basis for treatment or theory. The findings of a dose-effect relationship would

strengthen the hypothesis that substance abuse is a causal factor. Such evidence could subsequently be useful for theory development and the design of treatment programs. Second, findings of a dose-effect relationship between parental substance abuse and child physical abuse would refine the role of substance abuse as a predictor (e.g., does it predict child physical abuse in general or only more severe child physical abuse as some authors have suggested?—see Wolfner & Gelles, 1993). Additional knowledge about the role of substance abuse as a risk factor would be useful for guiding the development of prevention programs and tools designed to assess risk at child welfare intakes, an area where empirically derived knowledge about the predictors of risk for abusive behavior and severity is needed.

Review of the Literature

The literature review will summarize previous research on the risk factors for child physical abuse, the relationship between parental substance use and violence, the relationship between substance use and child physical abuse, and factors related to severity of physical abuse.

Child Physical Abuse Risk Factors

Although no single profile of parents who physically abuse children exists (Milner, 1992), a number of group-level perpetrator characteristics have been identified that are believed to represent areas of risk for child physical abuse. Christmas, Wodarski, and Smokowski (1996) recently reviewed the literature on risk-assessment for child physical abuse and identified seven major risk factors among the numerous factors that have been examined over the past 30 years. They concluded that the major risk factors shown most consistently in the literature are history of childhood physical abuse, depression, single parenting, socioeconomic status, social isolation, maternal age, and substance abuse. Milner (1992) also described these risk factors in his review of the child physical abuse literature. Research on each of these factors will be reviewed below.

Perhaps the most popularly known risk factor for child physical abuse is a parent's own childhood history of physical abuse. Although no longer widely accepted as a sufficient explanation for abuse and neglect, a history of childhood abuse continues to be recognized as a contributing factor (Christmas et al., 1996). Many abusive parents report abusive histories; however, the vast majority of abused children do not grow up to commit abuse (Milner, 1992). Previous research has

addressed the question of why some parents who were abused as children do not abuse their own children, while others do. Egeland, Jacobvitz, and Sroufe (1988) identified several distinguishing variables between these two groups of parents. They found that significantly more of the mothers who had not abused their own children reported having a supportive relationship with some adult in their childhood and as having been in therapy. Studies such as this illustrate that there are limitations to the idea of a childhood history of abuse being related to child maltreatment. Although being abused as a child may put one at greater risk for later becoming an abusive parent, many other factors must also be considered (Christmas et al., 1996). Researchers have suggested that a childhood history of abuse may be a marker for the presence of other family factors (e.g., poor parental communication, inappropriate parental expectations, lack of parental emotional support) that may be more directly related to the intergenerational transmission of abuse or may mediate the relationship (Milner & Chilamkurti, 1991).

Another commonly cited risk factor for child physical abuse is parental depression. Parental depression has been linked to physical child abuse and other forms of child maltreatment in many studies (Chaffin et al., 1996; Dinwiddie & Bucholz, 1993; Howing, Wodarski, Kurtz, & Gaudin, 1993; Lahey, Conger, Atkeson, & Treiber, 1984; Miller, Fox, & Garcia-Beckwith, 1999; Zuravin, 1989). Reviews of reported severe child physical abuse cases (Miller et al., 1999) and comparisons of abusers to nonabusive parents (Wolfe, 1985) have identified the heightened occurrence of depression and other stress-related symptoms among abusive parents. Depression was also found to be a strong prospective risk factor for physical abuse

among a nationally representative community sample of parents (Chaffin et al., 1996). This and other research reporting the connection between increased emotional distress and the occurrence of abuse have led to the proposal that parents who are in greater emotional and somatic distress may have a lower threshold for tolerating child misbehavior and may react more punitively (Lahey et al., 1984).

A potential relationship such as this between parental depression and risk for child physical abuse is not surprising for several reasons. First, increased irritability is a common symptom of depression. According to the DSM-IV, this irritability is often exhibited by depressed individuals as "persistent anger, a tendency to respond to events with angry outburst or blaming others, or an exaggerated sense of frustration over minor matters" (American Psychiatric Association, 1994, p. 321). These characteristics seem consistent with Lahey et al.'s (1994) assertion that depressed parents have a lower threshold for tolerating child misbehavior and respond more punitively to it than nondepressed parents. Second, the tendency of depressed individuals to hold negative perceptions of themselves, to interpret experiences in a negative way, and to view the future in a negative manner (e.g., Beck's cognitive triad) (Beck, Rush, Shaw, & Emery, 1979) is consistent with research examining depressed parents' perceptions of their children and themselves. For instance, research has indicated that depressed mothers perceive their children as having significantly more behavior problems than do nondepressed mothers and are more critical of them (Webster-Stratton & Hammond, 1988). Depressed mothers also perceive and report themselves to be less happy and adequate parents, more stressed

by parenting, and having less adaptive and more stressful children than nondepressed mothers (Frankel & Harmon, 1996).

In contrast to Lahey et al.'s (1984) proposal that the risk for child physical abuse increases with parental distress, other research has suggested that depression may play a differential role in child abuse depending upon the severity of the depression (Zuravin, 1989). Severely depressed mothers are not considered to be at increased risk for violent child abuse and physical aggression, since they may not have the energy to inflict injury on a child (Zuravin, 1989). However, moderately depressed mothers have a higher energy level, are able to inflict injury and are at increased risk for more serious child abuse and physical aggression (Zuravin, 1989).

Lower socioeconomic status (i.e., parental education and income) has also frequently been identified by as a risk factor for child physical abuse. Examinations of physically abusive families have shown that approximately 77% of families whose primary type of maltreatment was physical abuse experience financial difficulties (Daro, 1988), and one out of every three abusive families with children under 12 were receiving Aid to Families with Dependent Children (Olsen & Holmes, 1986). Results of controlled studies indicate that physically abusive families, compared to nonabusive families, are more often of low income and have younger mothers with less education (Whipple & Webster-Stratton, 1991). Reviews of CPS reports have yielded similar findings. Comparisons of substantiated reports of child abuse and neglect to unsubstantiated reports show both male and female abusers as having limited education and a relationship between unemployment and substantiated reports of abuse (Hawkins & Duncan, 1985). Lower family SES is also related to heightened

abuse potential (Kolko, Kazdin, Thomas & Day, 1993). Specifically, perceived financial stress and an education level less than ten years have been identified as significant risk indicators for child physical abuse (Cadzow, Armstrong, & Fraser, 1999). Existing research clearly supports a risk relationship between SES and child physical abuse. The observation of this relationship in reported cases (Olsen & Holmes, 1986), empirical studies (Whipple & Webster-Stratton, 1991), and a national survey (Straus, Gelles, & Steinmetz, 1981) suggests that this association is not merely due to a reporting bias against lower SES families (Milner, 1998). However, using SES as a risk factor is problematic since most lower SES parents do not physically abuse their children. Rather than a causal relationship between SES and physical abuse, it may be that SES is associated with other factors such as lower levels of parental affection, poor communication, and negative parent-child interactions (Milner, 1998).

Marital status is yet another risk factor for child physical abuse. Research has shown that single parenting is commonly found to be a significant characteristic of abusive families (Gelles, 1989; Milner, 1992; Webster-Stratton, 1985). Previous statistics on child abuse and neglect indicate that 40% of the cases reviewed occurred in single, female-headed families, although only 19% of the total number of families in the U.S. with children under age the age of 18 were headed by single females (Department of Health and Human Services, 1986). Reviews of the literature specific to child physical abuse have also noted that physically abusive parents are more likely to be single than nonabusive parents (Milner, 1992). Results of the Third National Incidence Study of Child Abuse and Neglect (NIS-3) indicated that children of single

parents had a 77% greater risk of being harmed by physical abuse (Sedlak & Broadhurst, 1996). However Sedlak subsequently noted that the influence of family structure depends on the age of the child(ren) (Sedlak, 1997). Results of single-factor analyses revealed that single-parent families are at greater risk, however, when the effects of child(ren)'s age were taken into account, analyses revealed that two parent families are at greater risk for physical abuse when the child(ren) is above 5 years of age (Sedlak, 1997). So, it may be that risk is higher for single parents when children are young, since parents of small children are also young (by definition), young children require a lot of parenting, and single parents may experience more parenting stress than those in two-parent families. In two-parent families, parents are able to share responsibilities, support one another, and thereby may experience lower stress. However, when two parents are present in the home this also doubles the number of potential abusers. So, although agreement generally exists that single parenting is a risk factor for abuse, the problem of child physical abuse is a complex one that likely involves unique interactions among factors such as single parenting and others reported by Sedlak (1997).

Another often cited risk factor for child physical abuse is parental social isolation. Daro (1988) identified social isolation as a primary problem in 68.5% of physically abusive families. Compared to nonabusive parents, abusive parents have been found to have significantly fewer people in their social networks, reported less contact with friends, and gave lower ratings of the quality of support received from friends (Bishop & Leadbeater, 1999; Salzinger, Kaplan, & Artemyeff, 1983).

The exact impact of social isolation is unclear, but lack of social support appears to increase the risk of child maltreatment (Christmas et al., 1996). Social support has been described as a buffer for parental stress, and the risk of abuse is thought to increase when the amount of social support is outweighed by the number and severity of stressors (Christmas et al., 1996). An inverse relationship has been found between maternal social support and mother-child stress (Adamakos, Ryan, Ullman, Pascoe, Diaz, & Chessare, 1986), lending support to the notion of support as a buffer for stress. Social support is also positively associated with satisfaction in the parenting role (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983).

Other researchers propose that the relationship is more complex than this. Wolfner and Gelles (1993) concluded that socially learned predispositions for violence, in combination with stressful conditions such as lack of social support, lead to the display of violent behavior. According to this view, the potential for acting abusively varies among individuals as a result of social learning and that factors such as parental stress and lack of social support exacerbate violent tendencies and result in violent attempts to resolve social conflicts (Wolfner & Gelles, 1993). This model accounts for the evidence that abuse transcends economic, racial, gender and age boundaries, and also that it is more common in some parts of the population than in others (Wolfner & Gelles, 1993). Such a model seems more appropriate than the direct relationship described by Christmas et al. (1996), since the relationship between social isolation and child physical abuse is likely a complex one that may be impacted by the presence or absence of other factors. It may also be less powerful a risk factor than depression or substance abuse.

A relationship between maternal age and child physical abuse has also been demonstrated in the literature. Abusive mothers are frequently cited as being significantly younger than nonabusive mothers (Howing et al., 1993; Miller, 1984; Whipple & Webster-Stratton, 1991; Zuravin, 1988), and abusive mothers have their first child at a significantly younger age (Zuravin, 1988). An examination of the effects of maternal age on the parenting role found that increased maternal age was significantly related to "greater satisfaction with parenting, to greater time commitment to that role, and to more optimal observed behavior" (Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982, p. 627). Taken together, this research suggests a negative, linear relationship between maternal age and risk for child physical abuse. Since risk is highest for the youngest mothers and since not all teenage mothers abuse their children, exploratory research has examined the correlates of child physical abuse by adolescent mothers to identify factors that distinguish abusive and non-abusive adolescent mothers (Zuravin & DiBlasio, 1996). Findings indicated that abusive adolescent mothers differed from nonmaltreating adolescent mothers in four ways: abusers were more likely to have preferred being alone as a child, more likely to have had an emotionally disturbed mother, more likely to have lived with a family that received Aid to Families of Dependent Children, and less likely to have been positively attached to their primary mother figure (Zuravin & DiBlasio, 1996). Although future efforts are needed to shed further light on the correlates of child physical abuse by teenage mothers, young maternal age appears to be a risk factor for child physical abuse according to past research.

Finally, substance abuse has been strongly associated with child physical abuse in the literature, and a number of studies have examined the relationship between the two. A substantial body of research supports a relationship between substance abuse and violence in general and a relationship between substance abuse and child physical abuse, specifically. Due to the focus of the current study on substance abuse and child physical abuse, this literature is presented in a separate section of this review in order to allow for greater breadth and depth of review.

Substance Abuse and Violence

The association between substance abuse and violence has been widely researched and is often cited in the literature. For instance, a study of state prison inmates serving time for violent offenses found that substance use was involved in 64% of the offenses (U.S. Department of Justice, 1991). Of these substance-related offenses, 54% of the perpetrators reported that they were under the influence of drugs or alcohol at the time of the offense and nearly 30% of the victims were perceived by the perpetrator to be using at the time of the offense. Controlled studies of aggressive responding have found individuals with a history of substance dependence to be more aggressive than individuals with no drug use history (Allen, Moeller, Rhoades, & Cherek, 1997). Moreover, levels of aggression and hostility are related to the use of multiple substances among female and male substance abusers seeking treatment, regardless of the substances used by the individual (McCormick & Smith, 1995).

Existing research clearly indicates that there is a relationship between alcohol, drugs, and violent behavior (Englander, 1997; Pihl & Hoaken, 1997); however, there is less agreement about a causal relationship between them (Johnson & Belfer, 1995).

Reviews of the empirical literature have led to the following conclusions about the relationship between substance abuse and violence: the nature of the relationship is interactional, multifactorial, and different for different classes of drugs (Pihl & Hoaken, 1997); and, in general, violent acts involving substance use are a combination of the physiological effects of the substances themselves, the personality of the user, and the social setting in which the act occurs that favors or disfavors aggression (Miller & Potter-Efron, 1990).

Alcohol is the drug most commonly and consistently associated with violence (Cohen, 1985). This is probably due to the common use and abuse of alcohol in the United States rather than to more pronounced aggressive effects of ethanol compared to other drugs (Englander, 1997; Miller & Potter-Efron, 1990). Nevertheless, alcohol has certainly been linked to aggressive behavior. One exception to this, however, is at the highest levels of intoxication, when individuals cannot act upon aggressive urges (Miller & Potter-Efron, 1990).

Researchers note that alcohol's most marked effect is on the brain (Bassuk, Schoonover, & Gelenberg, 1983), where it impairs nearly every aspect of information processing (National Institute on Alcohol Abuse and Alcoholism, 1994). Aggression can be triggered by alcohol use during intoxication, withdrawal, and in psychiatric states (Miller & Potter-Efron, 1990). Results of a recent meta-analysis reported an effect size of 0.43 for intoxicated over non-intoxicated aggressive responding in humans, and the author concluded that alcohol does affect aggression, particularly in men, although through indirect means (Bushman, 1996). An association between alcohol and violence is well demonstrated, but it is unclear how much of the

association is due to the direct effect of alcohol or to a link between alcohol use and other factors that are associated with violence (Moeller, Dougherty, Lane, Steinberg, & Cherek, 1998).

Drug use has also been associated with aggressive behavior. However, the relationship between substance use and violence tends to vary by drug type. For instance, stimulants such as cocaine and crack cocaine have commonly been associated with violence. But there is no clear evidence that these stimulants cause a general increase in violent crime (Englander, 1997). Rather, it may be that levels of aggression increase when taken in high doses, via certain routes of administration, and by people who have aggressive tendencies (Englander, 1997). Additionally, a strong association between barbiturate use and interpersonal violence has been found (Grinspoon & Bakalar, 1985). Although barbiturates are thought to be sedating, Cohen (1985) notes that they tend to produce irritable, argumentative behavior, perhaps because part of their effect is one of releasing the individual from normal inhibitions. Most research examining cannabis, on the other hand, indicates that it is at least as likely to reduce violent impulses as to increase them (Grinspoon & Bakalar, 1985; Taylor & Leonard, 1983). In sum, research has demonstrated an association between drug use and violence, however, some drugs appear more likely than others to encourage violent behavior.

The relationship between violence, substance abuse and other psychiatric disorders has also been examined. A study examining the relationship between psychiatric disorders and family violence among residents of a large Canadian city found that 54.5% of those who had a psychiatric diagnosis were involved in violent

behavior and, in turn, 49% of those involved in violent behavior had one or more psychiatric diagnoses (e.g., antisocial personality disorder, recurrent depression, alcohol abuse and/or dependence) (Bland & Orn, 1986). Furthermore, when alcoholism was combined with antisocial personality disorder (ASPD) and/or recurrent depression, the rates of violence rose to 80-93%. The rate of violent behaviors among those in the sample who did not have diagnoses was significantly lower (15.5%). Other studies have also shown significant differences in the effect of alcohol on aggressive responding among individuals with ASPD and those without ASPD, with a greater increase in aggressive responding after alcohol occurring among individuals with ASPD (Moeller et al., 1998). High comorbidity exists between substance abuse and other psychiatric disorders, and psychiatric patients with comorbid substance abuse disorders are said to constitute the greatest risk for violence (Pihl & Hoaken, 1997).

Studies examining the substance abuse-violence relationship have reported strong associations between substance abuse and specific types of violence such as domestic abuse. Rates ranging from 48% to 87% have been reported for the percentage of batterers that are under the influence of alcohol when they assault their partners (Collins & Messerschmidt, 1993; Johnson & Belfer, 1995). Drug use is also associated with domestic violence. Of men attending a domestic violence treatment program, 63% had a current diagnosis of psychoactive substance abuse or dependence, while 92.5% had a lifetime diagnosis (Brown, Werk, Caplan, & Seraganian, 1999). Furthermore, results indicated that dangerousness and frequency of abusive behaviors increased as severity of substance abuse increased.

Conceptual Models for the Relationship Between Substance Abuse and Physical Abuse

Child abuse that occurs while the abuser is under the influence of alcohol and drugs is yet another type of violence that is of particular concern. Over the years numerous conceptual models have addressed the etiology of child physical abuse. Of these, several models have addressed, either solely or in combination with other factors, characteristics associated with the abusive parent such as substance abuse. The psychiatric model, one of the earliest models of abuse, associates child physical abuse with a parent who is suffering from mental illness, personality disorder, alcohol or drug abuse, or some other individual defect (Straus, 1996). However, research has shown that only a small proportion of abusive parents (less than 10%) are significantly psychiatrically disturbed (e.g., severe, persistent mental illnesses) (Kempe & Helfer, 1972; Straus, 1980). Physically abusive parents often do, however, exhibit specific psychological characteristics and behaviors that distinguish them from nonabusive parents, such as substance abuse, depression, and anger control problems (Straus, 1996). Although the concept of significant psychiatric disturbances being associated with child abuse may not apply to the bulk of physically abusive parents, evidence does offer support for an association with psychological characteristics and behaviors such as substance abuse.

Other models conceptualizing the role of substance abuse in child physical abuse have focused on the impact of substance abuse on cognitive functioning and how this may ultimately lead to physical abuse. According to these models, substance use is said to impair the cognitive abilities of individuals, thereby altering

the perceptive cues and narrowing the perceived range of alternative responses (Steele & Josephs, 1990). This narrowing of attention limits the ability to process and reduces awareness of the behavioral consequences of violence. Therefore, substance abuse in families may be associated with miscommunication among family members, a limited focus on situational cues, an inadequate estimation of immediate threat and consequences, and an increased likelihood of violence (Miller et al., 1999).

Still other models have focused on the impact of substance abuse on affective responses in regard to increased risk for child abuse. Some authors have proposed that substance abuse causes emotional and cognitive changes that may interact with family and environmental cues and lead to poor parenting, thus, linking substances and family violence (Miller et al., 1999). Literature has noted that parents are less inhibited, have reduced judgement and emotional control and, consequently, may have a lower threshold for violence when under the influence of alcohol and drugs (Finkelhor, 1986; Kumpfer & Bays, in press). Another perspective is that negative reciprocal interactions exist between a parent's substance use, children and the environment (Lang, 1992, as cited in Miller et al., 1999). For instance, substance-abusing mothers may use inconsistent or harsh disciplinary practices that contribute to behavioral problems in children. These behavioral problems, in turn, may serve to increase a mother's distress and her motivation to use alcohol and/or drugs as a means of coping (Lang, 1992, as cited in Miller et al., 1999). Similarly, Wolfe (1987) hypothesized that high levels of substance involvement and punitiveness toward children are part of a constellation of maladaptive behaviors engaged in by mothers in an effort to cope with life stresses.

Another model addressing substance abuse and child physical abuse is the model of intergenerational substance abuse, family functioning and abuse/neglect (Sheridan, 1995). This model reflects the complexity of factors associated with child physical abuse and the possibility that substance abuse may play both a direct and indirect role in risk for child abuse. The model is based on the empirical relationships found between parental substance abuse, family dynamics, abuse/neglect, and substance abuse in offspring. Findings of the study indicated a direct relationship between parental substance abuse and child maltreatment, however, results suggested that substance abuse may also be indirectly associated through its impact on family dynamics (Sheridan, 1995). In other words, substance abuse may have adverse consequences on family dynamics; which, in turn, increases the likelihood of the occurrence of child abuse and neglect. Based on these findings, a model was proposed in which parental substance abuse has both a direct impact on child abuse and neglect, as well as an indirect influence through its negative relationship with family competence (Sheridan, 1995). The model states that a direct relationship between parental substance abuse and exposure to adult abuse/neglect continues in later life, and substance abuse continues to impact family competence and child abuse/neglect. These factors then directly and/or indirectly influence offspring substance abuse in later life and are repeated in subsequent generations unless effective intervention occurs.

Commonalities Among Child Abusers and Substance Abusers

Along with the aforementioned conceptual models, a number of commonalities between characteristics of child abusers and substance abusers have

also been identified. Similar characteristics exist for both child-abusing parents and substance-abusing parents, such as poor parenting skills, family disorganization, involvement in criminal activity, and a disproportionately high incidence of physical illness and psychological problems (Bays, 1990). Stor (1980) found commonalities between personality characteristics of physical abusers and alcohol abusers such as projecting blame and anger onto others, the need to control others and/or the environment, violent family background, and poor impulse control. These shared characteristics among substance-abusing parents and child-abusing parents may offer additional support for the connection between substance abuse and child abuse. However, these findings merely imply an association rather than any causal relationship. Shared characteristics that lead someone to abuse substances and/or to abuse children could be the causal factors, or substance abuse could play a mediating role between these other factors and child physical abuse.

Research Examining the Relationship Between Substance Abuse and Physical Abuse

Extensive literature has examined the connection between parental substance abuse and child physical abuse. With the exception of a few studies (see Orme & Rimmer, 1981), a link between substance abuse and physical abuse has consistently emerged from studies conducted across various settings (Chaffin et al., 1996; Holmes & Robins, 1988; Kaplan et al., 1983; Kelleher et al., 1994; Kolar et al., 1994; Miller et al., 1999; Whipple & Webster-Stratton, 1991; Windle et al., 1995).

Prevalence of Substance Abuse Among Abusive Parents. Reviews of reported child abuse cases have offered support for the frequent presence of parental substance abuse problems among child abuse cases. High percentages of substance abuse

problems among families receiving services from child protection agencies have been reported (Daro & Mitchel, 1990). Of 30 case records of severely physically abused children under age 5 nominated for review by CPS workers and mental health providers, 54% of the mothers and 50% of the fathers in the sample reported a history of alcohol and/or drug abuse (Miller et al., 1999). Also, in a sample of 206 cases of serious child maltreatment brought before a metropolitan juvenile court, at least one parent had a documented problem with either alcohol or drugs in 43% of the cases (Murphy et al., 1991). Of these cases, 34% reportedly abused only alcohol, 26% only drugs, and 40% abused both drugs and alcohol. A separate review of reported child abuse cases in New York City indicated that half of all reported cases were associated with parental drug abuse and 64% percent of cases were associated with alcohol and drug abuse (Chasnoff, 1988). Famularo, Kinscherff, and Fenton (1992) reported a similar percentage of parents abusing alcohol and drugs in their review of custody cases involving parental maltreatment. Results also revealed that alcohol abuse by the abusive parent was associated with child physical abuse and that drug abuse was associated with sexual abuse; but, interestingly, polysubstance abuse did not contribute any additional predictive value to the effects of alcohol in predicting physical abuse (Famularo et al., 1992). The association between drug abuse and sexual abuse, as well as the polysubstance abuse findings from this study should be taken with caution, however, since they have not been replicated in other studies.

Substance abuse also seems to influence courts' decisions regarding placement. Substance abuse is often implicated when the courts remove a child from the home (Kumpfer & Bays, in press). A 1986 study conducted in Illinois indicated

that 50% of all out-of-home placements were from substance-abusing families (Chasnoff, 1988). A study of cases at the Boston Juvenile Court revealed that parents with documented substance abuse were significantly more likely than nonsubstance-abusing parents to have previous referrals to child protective agencies, to be rated by court investigators as presenting high risk to their children, to reject court-ordered services, and to have their children permanently removed (Murphy et al., 1991). Clearly, substance abuse and child physical abuse frequently co-occur and research supports an association between them. However, the extent to which alcohol and other drugs are independently and uniquely related to child physical abuse warrants further empirical examination.

Parenting Practices of Parental Substance Abusers. In addition to studies examining the rate of substance abuse among parents in physically abusive populations, investigations of the parenting practices of parents with substance abuse disorders have been conducted. Kolar et al. (1994) interviewed 70 substance abusers in methadone maintenance treatment regarding the life experiences of their children. Significant levels of physical punishment were reported by these substance-abusing parents. Specifically, 46% reported they had hit a child harder than they thought they should, 16% hit a child with a fist, 46% hit a child with something other than their hand, 46% threatened a child with a weapon, and 1% used a weapon with a child (Kolar et al., 1994). Nineteen percent of parents also reported having charges filed against them in the past for neglect or physical abuse of their children.

Research examining child abuse potential among parents with and without histories of substance use disorders found that history of substance use disorders in

both mothers and fathers increases abuse potential (Ammerman, Kolko, Kirisci, Blackson, & Dawes, 1999). Parents with lifetime histories of substance use disorders had higher Abuse scale scores on the Child Abuse Potential Inventory (Milner, 1986) than those without such history and were more likely to score in the elevated range. No differences were found between parents with current diagnoses of substance abuse disorders and those with past (but not current) histories. So, the positive association between substance use disorders and abuse potential persists in parents even after they no longer have a substance use diagnosis (Ammerman et al., 1999).

Case vs. Control Studies. Studies comparing abusive parents to nonabusive controls have also supported the substance abuse-physical abuse connection. An empirical study in which the frequency of alcoholism among court-referred parents was compared to a control group of parents whose children were inpatients at a children's hospital indicated a significantly higher prevalence of current or previous alcoholism among court-referred families (52%) in contrast to control families (12%) (Famularo, Stone, Barnum, & Wharton, 1986). Comparisons of parents referred to a hospital-based child abuse and neglect treatment program to control parents of nonmaltreated pediatric outpatients at the same hospital indicated that a significantly larger percentage of abusive parents than control parents were given diagnoses of alcoholism (25% vs. 5%) (Kaplan et al., 1983). Additionally, abusive parents were more often given diagnoses of antisocial personality and labile personality, suggesting that parental psychopathology contributes to the occurrence of child abuse and neglect. These findings were further supported by Dinwiddie and Bucholz (1993) who found increased lifetime rates of antisocial personality disorder,

alcoholism, and depression among self-identified child abusers in comparison to nonabusers in a sample comprised of clinical, community, and family study participants. A secondary analysis of data from the National Institute of Mental Health's (NIMH) Epidemiologic Catchment Area study indicated that substance abuse disorders were more common among abusive/neglectful parents than matched controls after controlling for depression, household size, antisocial personality disorder, and social support (Kelleher et al., 1994). Retrospective reports by adults whose parents were alcoholic revealed that they were more likely to have experienced unfair or harsh parental discipline than respondents who reported that their parents were not alcoholic (Holmes & Robins, 1988).

Prospective Studies. Several longitudinal studies have examined the risk relationship between substance abuse and child physical abuse. A study that utilized longitudinal data from the NIMH Epidemiologic Catchment Area study addressed psychiatric, substance abuse, and social risk factors in relation to the onset of physical abuse and neglect (Chaffin et al., 1996). The results of this study offer further support for previous findings that substance abuse disorders are strongly associated with the onset of abuse (relative risk = 2.90) and neglect (relative risk = 3.24). Another longitudinal study followed 239 families reported to CPS and found that maternal alcohol abuse was predictive of subsequent child maltreatment reports (Wolock & Magura, 1996). Prospective examination of family reunification practices and reentry rates (e.g., reported incidents of child abuse/neglect after children previously removed from the home were returned to the home) has also demonstrated a risk relationship between substance abuse and child abuse (Terling, 1999). Thirty-

seven percent of the children in the study reentered the CPS system within 3 ½ years, and reentry was correlated with CPS history, abuse type, parental competency, race, criminal history, substance abuse, and social support. These studies suggest that a risk relationship does exist between substance abuse and child physical abuse in the general population.

In sum, a substantial amount of literature supports the existence of a relationship between substance abuse and child physical abuse. Several models have conceptually addressed the nature of this relationship and commonalities among child abusers and substance abusers have been identified. As of yet, a clearly supported and accepted model has not emerged, although researchers generally agree that risk for child physical abuse involves the complex interplay of multiple factors and the role of substance abuse is likely a complex one. Cross-sectional research consistently indicates a connection between substance abuse and child physical abuse (Dinwiddie & Bucholz, 1993; Famularo et al., 1986; Holmes & Robins, 1988; Kaplan et al., 1983; Kelleher et al., 1994; Whipple & Webster-Stratton, 1991), and the majority of previous studies agree that serious substance abuse increases risk for child mistreatment (Chaffin et al., 1996; Terling, 1999; Wolock & Magura, 1996).

Severity of Child Physical Abuse

Out of existing research that has identified risk factors for child physical abuse, a small body of literature has grown that examines the risk factors in relation to abuse severity. The examination of factors related to abuse severity has many unanswered questions. Despite numerous studies in the child maltreatment literature identifying risk factors for physical abuse, few risk studies focus on *severity* of child

physical abuse as an outcome. Severity of physical abuse was first studied in 1977 by Seaburg; however, a recent review of the research literature on the predictors of physical abuse severity yielded only 20 additional relevant articles (Hegar et al., 1994). Furthermore, only four of these studies used multivariate analytic techniques to predict severity of child abuse (Hegar et al., 1994). These studies measured severity on the basis of the degree of injury to the child, and none of the studies investigated factors related to severity of physical abuse behavior by parents.

Definitions and Measurement of Severity. A difficulty associated with the body of research that has addressed severity of child physical abuse lies in the lack of an agreed upon definition of severity. Researchers in this area often use definitions of what is severe versus less severe abuse that are unique to the particular study, rather than using a consistent definition of severity across existing studies (Chaffin, Wherry, Newlin, Crutchfield, & Dykman, 1997; Hanson, Smith, Saunders, Swenson, & Conrad, 1995), thus making it difficult to compare findings across studies.

Hegar et al.'s (1994) review of the literature is illustrative of the inconsistencies in definition that exist in this area. Of the four studies identified that used multivariate analytic techniques to predict severity of child physical abuse injury, each of these defined severity somewhat differently. For instance, Seaburg (1977) operationalized and measured severity with an 11-point severity scale developed by asking 40 protective services workers to rank 13 types of injuries. Using this scale, Seaburg created a severity rating for each abused child by summing the points for each injury that the child sustained. Later, Daley and Piliavin (1982) reanalyzed the same data set using a different approach to measuring severity. These

authors used the scale score for the most severe injury sustained by each victim, noting that Seaburg's (1977) procedure created a bias toward interpreting multiple-injury cases as automatically more severe. The differences in the ways that Seaburg (1977) and Daley and Piliavin (1982) treated severity in their analyses may account for differences in the factors that they identified as explaining variability in injury severity. Daley and Piliavin (1982) argued that their approach was better representative of the child abuse injury and should be used in future research.

Hampton (1987) and Rosenthal (1988) also defined severity in unique ways. Hampton (1987) utilized data from the 1980 National Study of the Incidence and Severity of Child Abuse and Neglect (NIS-1) to investigate racial differences among African American, White, and Hispanic families. For the purposes of the study, Hampton (1987) used the NIS-1 project's categorization of severity of physical abuse injury or impairment: fatal, serious, moderate, or probable. Rosenthal (1988) used a different system in a study of patterns among confirmed reports made in Colorado from 1977 through 1984. The analysis of severity for this study made use of the Colorado state agency's classification system. This system consisted of the following dichotomous categories: serious injury (included brain damage, fractures and sprains, internal injuries, and serious soft-tissue injuries from burns, cuts, scalds, bruises and welts) and minor injury (included burns, scalds, cuts, bruises and welts not judged as serious). Although each of these studies contributed useful knowledge, the inconsistencies in definition of severity again make comparisons of studies difficult.

Three additional studies not included in Hegar's review that included abuse severity as one aspect of the study were also identified: Zuravin, Watson, and

Ehrenschaft (1987), Dalgleish and Drew (1989) and Zuravin et al. (1994). In a study of the seriousness of anonymous reports of child physical abuse in comparison to reports from other sources, Zuravin et al.'s (1987) definition of the seriousness of the allegation comprised four categories of physical force: 1) no mention of injury; 2) superficial injury—cuts, bruises, scratches, welts, or first degree burns localized in one or two areas; 3) moderate injury—second degree burns, cuts requiring sutures, mild concussions, fractures of small bone (i.e., finger or toe), etc.; and 4) severe injury—internal injuries, severe concussion, third degree burns, compound fractures and simple fractures of long bones, etc.—or death.

Another method of defining severity was utilized by Dalgleish and Drew (1989) who studied the relationship between child abuse indicators to the assessment of perceived risk and to the court's decision to separate. Indicators for severity of the abuse consisted of two parts, A and B. Part A was comprised of the nature of the injuries, the pattern of the abuse (numerous incidents over time), and the suspicion engendered by parents' explanation (Dalgleish & Drew, 1989). Part B was comprised of descriptions of 3 levels of abuse: low—high potential of abuse, but no substantiated episodes or isolated, minor incident (e.g., bruise on leg); medium—bruises on face (i.e., location of bruising), two separate locations of bruising, fractured bone; and high—severe, deep bruising, bruises of different ages indicating more than one assault, burns, more than one bone fracture, skull fracture, subdural/retinal hemorrhage as a result of severe shaking (Dalgleish & Drew, 1989).

Predictors for injury severity caused by physical abuse were also studied by Zuravin et al. (1994) by reviewing information included in child protection agency

abuse reports. Consistent with the recommendations of Daley and Piliavin (1982), a code for level of severity was assigned to a child on the basis of the most severe injury sustained, regardless of the total number of injuries. Four levels of injuries were defined: no injury, mild injuries, moderate injuries, and severe injuries.

A method similar to those used by Zuravin et al. (1994) and Daley and Piliavin (1982) for measuring abuse severity (e.g., coding severity on the basis of the most severe injury sustained) has also been used for measuring neglect severity. The Child Neglect Index (CNI) was developed by Trocme' (1996) and was designed to specify type and severity of neglect for use by child welfare practitioners and researchers. This index consists of six neglect scales (supervision, nutrition, clothing and hygiene, physical health care, mental health care, developmental/educational care) and each scale is rated on a four- to five-level severity scale, ranging from adequate, to inconsistent, to inadequate, to seriously inadequate. The CNI is scored by combining the score on the scale receiving the highest severity rating with an age score. Field-testing shows that the CNI correctly predicts the maltreatment classifications of the National Incidence Study (NIS) child protection worker survey form (Trocme', 1996). CNI scores also predict worker decisions to keep cases open for additional services and are strongly correlated with an existing widely used measure of neglect.

In sum, the research examining severity of child physical abuse continues to be a small body of literature that largely lacks coherence in definition and measurement of abuse severity. Despite the facts that varying definitions of physical abuse severity are typically used in these studies and generally accepted measures are

not in wide use, there fortunately does appear to be agreement among researchers and clinicians regarding what is more versus less severe abusive behavior (Chaffin et al., 1997). A recent survey of professionals from across the nation suggests that considerable agreement exists on how professionals rank abuse features in terms of severity (Chaffin et al., 1997). On the basis of these results and in response to the need for the development of valid and reliable instruments for measuring abuse severity, scales for the Abuse Dimensions Inventory (ADI) were developed by Chaffin et al. (1997). Like the CNI neglect measure (Trocme', 1996), the ADI provides a measure of the level of abuse severity using the most severe abusive incident. The ADI is unique to other methods of measuring abuse severity in that it measures the severity of parental abuse behavior rather than injury severity. The development of this and similar instruments will, hopefully, lead to increased consistency across studies regarding the manner in which abuse characteristics and severity of physical abuse behavior are defined and measured.

Child Characteristics Related to Severity. The small body of severity research that currently exists is comprised of studies that examine how severity of injury relates to child and/or perpetrator characteristics such as age, gender, race, and perpetrator's relationship to the child. Of the factors relating to the child victim, Hegar et al. (1994) noted that age of the abused child is a frequently explored variable. Considerable agreement exists in the literature that young children are at a greater risk for severe physical injury due to child abuse (Daley & Piliavin, 1982; Rosenthal, 1988: Seaberg, 1977). The implications for injury resulting from the same parental behavior may be very different depending upon the age of the child. For

example, shaking a baby has much more serious implications than does shaking a teenager.

The relationships between severity of physical abuse and other child variables are less clear. Research exploring the relationship between gender of the abused child and severity of abuse has produced mixed results. With the exception of the Rosenthal (1988) study, multivariate severity studies have not demonstrated a relationship between gender of the child and abuse severity (Zuravin et al., 1994). Rosenthal (1988), however, reported findings that male children were significantly more likely to be severely injured than female children. Interestingly, boys were overrepresented as victims of serious injury for ages birth to twelve years, whereas girls were overrepresented among those seriously injured during adolescence (Rosenthal, 1988). An interaction effect between the genders of the child and perpetrator was also indicated in this study. Specifically, findings revealed that parents tend to abuse same-sex children—i.e., men tend to abuse boys and women tend to abuse girls (Rosenthal, 1988). Although interesting, these gender effects have not been replicated across studies. Additional research is needed in order to gain a better understanding of this relationship.

Findings regarding race of the child in relation to severity of abuse must also be interpreted cautiously. Some research has found that African American children are overrepresented among child abuse fatalities, however, this relationship requires further investigation since some studies have failed to control for the effects of social class (Hegar et al., 1994).

Perpetrator Characteristics Related to Severity. A consistent relationship between sex of the perpetrator and severity of child abuse has been identified (Hegar et al., 1994). More serious abuse injury appears to occur when children are abused by males (Hegar et al., 1994; Rosenthal, 1988). Sex of the perpetrator is second only to age of the child as the factor most clearly and consistently linked to injury severity (Hegar et al., 1994).

In contrast, little is currently known about how a perpetrator's relationship to the child relates to severity of abuse. It is clear that parents are the most frequent abusers, but many studies have failed to distinguish between biological parents, stepparents, parents' lovers, and foster parents (Hegar et al., 1994). As a result, findings may more accurately reflect proximity or access to the child, rather than kinship (Hegar et al., 1994). One study was found, however, that examined the relationship between age of the biological mother and severity of child maltreatment (Miller, 1984). Results of this secondary analysis of the National Incidence Study indicated that maltreatment was most severe when inflicted on children whose mothers were teenagers *or* who were 55 years old or older. In light of additional findings that maltreated young children (2 years old or less) and maltreated children 15 to 17 years old were often found to suffer serious or fatal injuries, Miller (1984) notes that these findings are not surprising. The youngest children were predominantly those of teenage mothers and the adolescent children predominated among the oldest mothers, suggesting an interaction between these two variables. This was the only study found that examined these variables, however, so results are

tentative at this time. Currently, the only consistent findings regarding perpetrators continue to be the identification of caregivers as the most frequent abusers.

Taken as a whole, the literature on physical child abuse severity clearly indicates that further research is warranted. The empirical literature is just beginning to uncover the factors that correlate with and predict severity of physical abuse. With the exception of demographic characteristics, such as child's age and perpetrator's gender, the relationship between other factors and severity of abuse has yet to be answered satisfactorily (Hegar et al., 1994). To date, there have been no studies that have examined the relationships between severity of physical abuse behavior and parental risk factors such as substance abuse, despite considerable research that has identified a relationship between these factors and child physical abuse. Extending previous research to examining the relationship between severity of parental abuse behavior and substance abuse seems a logical and appropriate next step in this body of literature.

Hypotheses

The following hypotheses regarding the relationship between severity of parental substance use and child physical abuse are proposed for testing:

Hypothesis 1: There is an increasing, linear relationship (e.g., dose-effect relationship) between DSM-III substance disorder symptoms (e.g., alcohol symptoms and drug symptoms) and the severity of physical abuse behavior toward children among abusive parents.

Hypothesis 2: Severity of physical abuse behavior will differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who

meet criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis. Group order for severity of abuse behavior will be Substance dependence (with or without abuse) > Substance abuse (without dependence) > No diagnosis.

Hypothesis 3: There is an increasing, linear relationship (e.g., dose-effect relationship) between DSM-III substance disorder symptoms and risk for future child physical abuse among abusive parents.

Hypothesis 4: Risk to engage in future abuse will differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who meet criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis. Group order for the degree of risk for future abuse will be Substance dependence (with or without abuse) > Substance abuse (without dependence) > No diagnosis.

Method

Participants

Participants will consist of 60 abusive parents/caregivers who participated in a clinical trial for physically abusive parents and their children conducted at a children's hospital. Participants were referred to the study by Child Protective Services (CPS) after a finding of confirmed or probable child physical abuse. The proposed study will utilize pretreatment data collected for the treatment-outcome study. Parents who were referred and completed a pre-treatment assessment for the project will be included in the sample.

Eligibility for inclusion in the study was determined based on the following criteria:

1. The index abuse event involved a confirmed case of parent-child physical abuse (including stepparents and others in a clear parenting role to the child).
2. The index event involved a child between the ages of 4 and 12.
3. The most recent incident of physical abuse occurred no longer than six months prior to referral.
4. Neither parent was confirmed as sexually abusive.
5. There was either ongoing regular contact or potential regular contact between the child and the abusive parent. Both the abusive parent and the abused child were available for participation. No termination of parental rights petition was pending.
6. The abusive parent had a measured IQ score of at least 70.

Informed consent was obtained from each participant at the time of his or her agreement to participant in the study. Participation in the study was voluntary.

Instruments

Instruments for the predictor/independent variables will address alcohol and drug use. The criterion measures will assess severity of child physical abuse and risk for future abuse. Demographic and social ecology information will also be obtained for the purpose of describing the characteristics of the sample. Instruments listed by domain are depicted in the following grid:

	Parent Report	Other
Demographics and Social Ecology	• CCAN Demographic Questionnaire	
Substance Abuse	• DIS – Alcohol • DIS – Drug	
Maltreatment Characteristics		• ADI
Potential for Future Maltreatment	• CAP Inventory	

Substance Abuse—This domain includes measures of symptoms for alcohol abuse/dependence and drug abuse/dependence.

Diagnostic Interview Schedule (DIS). The DIS (Robins, Helzer, Croughan, & Ratcliff, 1981) is a structured interview designed to be administered by nonclinicians that uses diagnostic algorithms to derive lifetime and current psychiatric diagnoses according to Diagnostic and Statistical Manual of Mental Disorders, third edition (DSM-III), criteria. In addition to deriving a diagnosis, the number of symptoms

endorsed for each disorder by the respondent can also be calculated. The modules pertaining to the diagnosis of alcohol abuse/dependence and drug abuse/dependence will be the only portions of the DIS utilized for the proposed study. Items are answered in a forced-choice, yes-no format and are presented in lifetime (e.g., ever happened) and past three months formats. DSM-III lifetime diagnoses of alcohol and drug disorders, as well as lifetime symptom counts, will be utilized for data analysis.

Previous research has demonstrated the reliability of the DIS in the detection of alcohol and drug disorders. Several studies have compared independent administrations of the DIS by lay interviewers to administrations by psychiatrists who could ask additional questions if they wished (Helzer, Robins, McEvoy, Spitznagle, Stoltzman, Farmer, & Brockington, 1985; Robins et al., 1981). In one study an inter-rater agreement rate of 0.86 was obtained for the alcohol module and 0.73 for the drug module (Robins et al., 1981). Using a sample of community residents, Helzer et al. (1985) obtained kappa coefficients of 0.68 for diagnosis of alcohol abuse or dependence and 0.70 for diagnosis of drug abuse or dependence. The results of these studies and others reflect a fair to good level of diagnostic agreement between lay interviewers and psychiatrists using the DIS to diagnose alcohol and drug disorders.

The validity of the DIS for diagnosing alcohol and drug disorders is also supported by diagnostic agreement with standardized psychiatric diagnoses. Diagnoses made by the lay DIS method and a standardized psychiatric diagnosis by a psychiatrist have found 92% ($k = .68$) agreement for the diagnosis of alcohol-use disorders (abuse and dependence combined) and 97% agreement ($k = .70$) for drug-use diagnoses (Helzer et al., 1985). The DIS has also been compared to other similar

instruments. Comparison of DIS diagnoses to the Schedule for Affective Disorders and Schizophrenia—Lifetime (SADS-L) diagnoses found a kappa value of 0.66 using a sample of patients in alcohol rehabilitation (Hasin and Grant, 1987).

Demographic/Social—This domain includes a self-report questionnaire that solicits information on socio-economic status, neighborhood characteristics and general demographics.

CCAN Demographic Questionnaire. This 55-item questionnaire assesses a number of demographic and social ecology variables: ethnicity, household composition, family income, educational level of caregivers and lifestyle of family members (including a variety of health behaviors). The questionnaire has been piloted and used with over 1,600 parents to date.

Maltreatment Characteristics—This domain includes measures of the nature and severity of child physical abuse. Information for this criterion measure was obtained from a telephone interview with the assigned DHS caseworker for each case and review of each family's DCFS case records.

Abuse Dimensions Inventory (ADI). The ADI (Chaffin et al., 1997) is an ordinal measure of the severity of child maltreatment across several dimensions. The instrument consists of 15 dimensions designed to measure the severity of physical and sexual abuse. The physical abuse section has scales measuring physical abuse behavior severity, duration of abuse, number of most severely rated injuries, and number of total incidents. The scale measuring physical abuse behavior severity is the only scale that will be used for the proposed study.

Severity rankings for the ADI were developed based on a national survey of professionals working in the field of child abuse. The instrument has been shown to have good overall inter-rater reliability (kappa = 0.94), and inter-rater reliability of 0.99 has been demonstrated for the physical abuse behavior scale (Chaffin et al., 1997). A factor analysis examining the construct validity of the instrument yielded a four-factor model (abuse behavior, duration/frequency, coercion, behavioral severity) that explained 64% of the variance (Chaffin et al., 1997). As expected, physical and sexual abuse items loaded on separate factors.

Potential for Future Maltreatment—This domain includes a measure of the risk for child physical abuse in the future. Information for this domain relied on parental self-report.

Child Abuse Potential Inventory (CAP). The CAP Inventory (Milner, 1986) is a well known and widely used self-report tool used to screen for child physical abuse potential (e.g., risk for abuse). The instrument consists of 160 items that are answered in a forced-choice, agree-disagree format. The physical child abuse scale contains six descriptive factor scales (e.g., distress, rigidity, unhappiness, problems with child and self, problems with family, and problems from others) and consists of 77 weighted items that are summed to provide an abuse score. Milner (1986) cautions that although the CAP Inventory Abuse scale can be described by the six aforementioned factors, "only the total 77-item Abuse scale score, not individual factor scores, should be employed for the screening of physical child abusers" (p. 4). The CAP Inventory also contains validity scales (lie scale, random response scale and

inconsistency scale) that are used to produce three response distortion indexes: the faking-good index, faking-bad index, and the inconsistency index.

Studies examining the psychometric properties of the CAP Inventory show that it has good internal consistency reliability and temporal stability. Split-halves and Kuder-Richardson-20 (KR-20) internal consistency estimates reported in the technical manual indicate high internal consistency coefficients across non-abusive control groups (0.92 to 0.96) and abuse groups (0.95 to 0.98) (Milner, 1986). KR-20 reliability estimates are reported at 0.94 for child physical abusers and 0.92 for non-physically abusive comparison parents (Milner & Robertson, 1990). Similar values were obtained for other subgroups drawn from the abusive and nonabusive groups. Internal consistency estimates for the factor and validity scales are lower relative to the high levels reported for the CAP Inventory Abuse scale, however, they are in acceptable ranges for the intended purposes of the scales (Milner, 1986). In regard to temporal stability, test-retest reliabilities were obtained for 1-day, 1-week, 1-month, and 3-month intervals for the Abuse scale using male and female groups from the general population. The reported Abuse scale test-retest reliabilities were 0.91, 0.90, 0.83, and 0.75, respectively, and did not appear to be systematically influenced by gender, age, educational level, and ethnic background (Milner, 1986).

A number of studies have also examined the validity of CAP Inventory. The instrument's content validity is supported by the procedures used to define the content domain and to develop the original item pool (Milner, 1986). Existing theory and research were used to define the content domain and it was then sampled. Numerous construct validity studies on the Abuse scale have been published and are summarized

in the technical manual. Collectively, these studies indicate that the Abuse scale is measuring constructs thought to be related to child physical abuse (Milner, 1986). The CAP Inventory has been shown to discriminate between groups of physical abusers, neglectful parents, at-risk parents, and comparison subjects (Milner, 1986; Milner & Robertson, 1990). Good predictive validity for the CAP Inventory is indicated by a significant relationship between elevated abuse scores and later confirmed child physical abuse found among a group of at-risk parents (Milner, Gold, Ayoub, & Jacewitz, 1984). Significant relationships were also found between each of the six Abuse scale factor scales and later physical abuse.

Procedures

Following referral to the larger study by the county CPS, the project case manager/home visitor contacted the prospective participant by phone, letter, or home visit. A face-to-face meeting was requested in which staff explained the nature of the research project, the informed consent form, conformance with State mandatory reporting laws, and solicited the prospective participant's agreement to participate.

If the prospective participant met inclusion criteria and agreed to participate, an appointment for pre-treatment assessment was scheduled by the case manager/home visitor. All assessments were completed at the hospital and included both the abusive parent and the identified child. A variety of structured interviews and questionnaires, as well as parent-child observations, were completed by the parent and child as part of the overall study. For the purposes of the proposed study only a portion of the abusive parent's pre-treatment data will be utilized (i.e., Diagnostic Interview Schedules for Alcohol Abuse/Dependence and Drug

Abuse/Dependence, CAP Inventory, and CCAN Demographic Questionnaire). The DIS interviews were conducted by masters and doctoral level students who had received instruction in conducting the interviews and in completing the DIS.

Unlike the other instruments used, the ADI was not completed on the day of the parent/child assessment. Information for this measure was obtained through a telephone interview with the CPS caseworker at the time of referral for each family and also through subsequent review of the family's CPS case records. The ADI was completed by masters and doctoral level students who were trained in conducting the interviews and in completing the ADI. For the purpose of the proposed study, ten of the 60 families included in the sample will be randomly selected and the ADI will be re-coded by an independent rater to examine inter-rater reliability for this instrument.

Data Analysis

An initial analysis will consist of computing descriptive statistics to define the demographic characteristics of the sample. The mean, range, and standard deviation, as well as cumulative frequencies, will be calculated for information provided in the demographic questionnaire.

Distributions of the predictor and outcome variables will next be examined. Descriptive statistics will be computed and examined for each predictor, including skew and kurtosis to ensure that the data set meets the assumptions necessary to compute subsequent statistical analyses. Participant scores for each predictor will then be converted to z-scores to enable the detection of potential outliers. Outliers will examined to determine whether they should remain in the data set, be dropped from the data set, or be transformed. If outliers are dropped, the distributions of the

predictor variable(s) will be examined once again to check the distribution without the outliers. If it is most appropriate to transform the scores rather than to drop them, the least powerful transformation necessary will be used to correct the distribution. After scores are transformed, descriptive statistics will be recomputed and examined. Examining the distributions of the predictor variables and deleting or transforming outliers should reduce the risk for errors.

Next each of the four hypotheses will be addressed by a separate analysis procedure. Alpha will be controlled at the level of the hypothesis.

Hypothesis 1: There will be a linear, increasing relationship (e.g., dose-effect relationship) between DSM-III substance disorder symptoms (e.g., alcohol symptoms and drug symptoms) and the severity of physical abuse behavior toward children among abusive parents.

To address this hypothesis, a simultaneous multiple regression analysis will be conducted to examine the independent effects of alcohol and drug symptoms, as well as the non-additive effects of the presence of both alcohol and drug symptoms, on severity of physical abusive behavior. Drug and alcohol symptom counts from the DIS (Robins et al., 1981) will be entered as predictors and the criterion will be a code on the ADI (Chaffin et al., 1997) for the level of physical abuse behavior severity engaged in by the parent. As suggested by previous research measuring abuse and neglect severity (Daley & Piliavin, 1982, Trocme', 1996; Zuravin et al., 1994), a code for level of severity will be assigned on the basis of the most severe physical abuse behavior shown by the parent, regardless of the total number of abusive behaviors.

If the multiple regression reveals that alcohol symptoms, drug symptoms, and/or the presence of both are significant predictors of abuse severity, follow-up symptom-by-symptom analyses will be conducted for the significant predictors using independent t-tests to examine the relationship between the criterion and individual symptoms of the significant predictor(s). The alcohol module consists of 17 symptoms and the drug module consists of 8 symptoms.

Hypothesis 2: Severity of physical abuse behavior will differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who meet criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis. Group order for severity of abusive behavior will be Substance dependence (without or with abuse) > Substance abuse (without dependence) > No diagnosis.

To address this hypothesis, a one-way ANOVA will be performed to determine whether differences exist among parents with substance dependence, parents with substance abuse, and those with no substance-related diagnosis. Drug and alcohol diagnoses from the DIS (Robins et al., 1981) will be collapsed into general substance abuse and dependence categories and will be used to assign participants to groups (e.g., abuse, dependence, no diagnosis). The dependent variable will be participants' scores on the ADI (Chaffin et al., 1997) as previously described.

Two-way ANOVA's will also be computed to examine: 1) differences among parents with substance dependence diagnoses (e.g., alcohol dependence only, drug dependence only, both drug and alcohol dependence, no diagnosis) on the severity of

abusive behavior; and 2) differences among parents with substance abuse diagnoses (alcohol abuse only, drug abuse only, both drug and alcohol abuse, no diagnosis) on the severity of abusive behavior.

Since multiple tests will be performed to test this hypothesis, alpha will be adjusted using the Bonferroni correction.

Hypothesis 3: There will be an increasing, linear relationship (e.g., dose-effect relationship) between DMS-III substance disorder symptoms and risk for future child physical abuse among abusive parents.

To address this hypothesis, a multiple regression analysis will be performed to examine the independent effects of alcohol and drug symptoms, as well as the non-additive effects of the presence of both alcohol and drug symptoms, on risk for future abuse. Again, predictor variables will be alcohol and drug symptom counts as measured by the DIS (Robins et al., 1981). The criterion will be risk for future abuse as measured by a score on the Abuse scale of the CAP Inventory (Milner, 1986).

If the multiple regression reveals that alcohol symptoms, drug symptoms, and/or the presence of both are significant predictors of risk for future abuse, symptom-by-symptom analyses of the significant predictor(s) will be conducted as a follow-up using independent t-tests. Additionally, the independent effects of alcohol and drug symptoms and the non-additive effects of the presence of both drug and alcohol symptoms will be examined in regard to the six subscales that comprise the CAP Inventory Abuse scale (e.g., distress, rigidity, unhappiness, problems with child and self, problems with family, problems from others). Multiple regression analyses

will be performed to examine these relationships. Alpha will be adjusted using the Bonferroni correction.

Hypothesis 4: Risk to engage in future abuse will differ among parents meeting DSM-III criteria for a diagnosis of a substance dependence disorder, parents who meet criteria for a diagnosis of substance abuse, and those who do not meet criteria for a substance-related diagnosis. Group order for risk for future abuse will be Substance dependence (with or without abuse) > Substance abuse (without dependence) > No diagnosis.

This hypothesis will be addressed in a manner similar to hypothesis 2. A one-way ANOVA will be performed to compare substance dependence, substance abuse, and no diagnosis as determined by the DIS (Robins et al., 1981). The dependent variable will be participants' scores on the Abuse scale of the CAP Inventory (Milner, 1986). Two separate 2-way ANOVA's will then be computed to examine: 1) differences among parents with substance dependence diagnoses (e.g., alcohol dependence only, drug dependence only, both drug and alcohol dependence, no diagnosis) on risk for future abuse; and 2) differences among parents with substance abuse diagnoses (alcohol abuse only, drug abuse only, both drug and alcohol abuse, no diagnosis) on risk for future abuse.

Alpha will be adjusted using the Bonferroni correction, since multiple tests will be used to test this hypothesis.

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The University of Oklahoma

OFFICE OF RESEARCH ADMINISTRATION

April 24, 2000

Ms. Shelli Shultz
309 Potomac Drive
Norman OK 73072

Dear Ms. Shultz:

The Institutional Review Board-Norman Campus, has reviewed your proposal, "Relationship Between Parental Substance Abuse and Severity of Child Physical Abuse." The Board found that this research would not constitute a risk to participants beyond those of normal, everyday life except in the area of privacy which is adequately protected by the confidentiality procedures. Therefore, the Board has approved the use of human subjects in this research.

This approval is for a period of 12 months from this date, provided that the research procedures are not changed significantly from those described in your "Summary of Research Involving Human Subjects" and attachments. Should you wish to deviate significantly from the described subject procedures, you must notify me and obtain prior approval from the Board for the changes.

At the end of the research, you must submit a short report describing your use of human subjects in the research and the results obtained. Should the research extend beyond 12 months, a progress report must be submitted with the request for re-approval, and a final report must be submitted at the end of the research.

If you have any questions, please contact me.

Sincerely yours,

Susan Wyatt Sedwick

Susan Wyatt Sedwick, Ph.D.
Administrative Officer
Institutional Review Board

SWS/pw
FY00-242

cc: Dr. E. Laurette Taylor, Chair, Institutional Review Board
Dr. Avraham Scherman, Educational Psychology

HEALTH SCIENCES CENTER

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THE CHILDREN'S HOSPITAL OF OKLAHOMA

March 25, 1999

Avraham Scherman, Ph D
Counseling Psychology Program
Collins Hall, 820 Van Fleet Oval
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University of Oklahoma
Norman, Oklahoma 73019

RE Dissertation proposal for Shelli Shultz

Dear Avi,

I'm writing to document our commitment to allow Shelli Shultz to access data collected through the Physical Abuse Treatment Outcome Project at the University of Oklahoma Health Sciences Center. This project has been reviewed and approved the OUHSC Institutional Review Board. Ms. Shultz will participate in data collection for this project However, her proposed research is not directly related to any of the major goals or hypotheses of the project and is independent research which will make use of archival data collected by the project for other purposes. While our project focuses on treatment outcomes, Ms. Shultz's project will investigate the relationship between risk factors and the severity of abuse prior to treatment. Consequently, there is no conceptual overlap between the two studies. I have reviewed her proposal and feel that it has the potential to make a significant independent contribution to the literature and will work with Ms Shultz in any way necessary to insure that she has full access to this data set for her project If I can be of any assistance, please call me

Sincerely,

Mark Chaffin, Ph.D.
Associate Professor of Pediatrics
Clinical Associate Professor of Psychiatry

Center on Child Abuse and Neglect
CHO 383406 • P.O. Box 26901 • Oklahoma City, Oklahoma 73190
(405) 271-8858 • FAX (405) 271-2931

CONSENT FORM

UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER

Consent to Voluntary Participation in a Research Project

INTRODUCTION
This study, "Alternatives for Families (AFF)" is sponsored by the United States Department of Health and Human Services, Administration on Children and Families, and is directed by Dr. Mark Chaffin and co-directed by Dr. Barbara Bonner at the University of Oklahoma Health Sciences Center in Oklahoma City.

PURPOSE
The AFF project is studying three different service programs for parents and children in cases referred by the Oklahoma Department of Human Services (DHS) where physical child abuse has been a concern. The purpose of the research is to see which of these service programs best helps parents and children.

TYPES OF SERVICES
Three service programs are being studied by the AFF project. The first program is the Parents Assistance Center or "PAC" program. The PAC program provides support groups and parenting education as well as additional services. The second program is the Behavioral Parenting or "BP" program. The BP program teaches a number of child discipline and interaction skills. The third program is the Enhanced Behavioral Parenting or "EBP" program. The EBP program provides Behavioral Parenting plus a variety of supportive services. The PAC program is provided at the Parent's Assistance Center office in Oklahoma City, and the BP and EBP programs are provided at Children's Hospital of Oklahoma. The PAC program has been used for many years where child physical abuse has been a concern. The BP and EBP programs have been used for many years with other problems, but their use in cases where physical abuse is a concern is new. All of the programs are designed to be helpful, but we don't know which one is best for any individual family.

DESCRIPTION OF THE STUDY
If you volunteer to be a participant in the study, you and your children will meet separately with an interviewer who will ask about a number of things, such as your child's strengths and weaknesses, your child's problems at home and in school, how you discipline your child, how you and your child solve conflicts, and your feelings about a number of things in daily life. The interview will include a thirty minute observation of you and your child. Interaction between you and your child during assessment will be video taped. Information will be obtained from your DHS worker if you have one. The interviewer will meet with you and your child at Children's Hospital of Oklahoma for the assessment. If your child is school-age, the interviewer also will send a short questionnaire asking about school behavior to your child's teacher, but the questionnaire will not tell the teacher anything about the AFF project or why you and your children are participating.

After you and your children meet with the interviewer, and if you are determined by the AFF staff to be eligible for the study, you will be assigned to one (1) of the three service programs, either PAC, BP or EBP. Which of the three programs you receive will be determined completely by chance. No matter which of the programs you receive, it will take about two hours each week and will last for about six months.

Each of the programs will involve you and your children coming to support groups or classes once a week. In the BP and EBP programs you and your children will meet together to practice ways of interacting and child discipline. Some of the sessions will be videotaped to make sure the therapists are conducting sessions appropriately. If there are other problems in your family, such as problems with drinking or depression, each of the programs will offer some kind of help. In some programs, substance abuse groups and medication for depression will be available as part of the program for those who need it and who agree to receive these additional services. In other programs, you would be referred to an outside agency if you needed or wanted to receive these services. Depending on which of the three programs are assigned, a home-visitor may be available to help with parenting advice, support, and other things.

After about six months, you and your children will meet again with the interviewer. The interviewer will not know which program you have been in, and will not speak with your counselors. The interviewer will ask the same questions and give the same questionnaires as before. Information you tell the interviewer will be used only for the research study and will not be released to DHS or your counselor unless you give us permission. After all the counseling and interviews are over, AFF will check with the Department of Human Services to see if there have been any additional reports filed in your case for a period of 10 years after you and your children leave the program.

COSTS
All services provided by the project are at no cost to participants.

RISKS
None of the programs used in this study has been found to cause seriously harmful side effects. It is always possible that there may be risks which are not expected or foreseen. You and your children might feel emotionally uncomfortable responding to some of the questions from the interviewer, joining a group discussion, or talking about personal matters with program staff. This is a common reaction and usually is not serious or long lasting. As with any parenting program or psychological program, you may be presented with ideas or suggestions which go against your personal beliefs or values, and you may find this distressing. Should this happen, you will have an opportunity to discuss it with the project director and seek a solution.

If the project director feels you or your children are experiencing serious side effects from participating in the study, or are likely to experience serious side effects, he may choose to remove you from the study with or without your consent. The project director will inform you of any newly identified risks or findings which might effect your decision to participate.

If you are recommended for any additional services or treatment, you will be informed of the possible risks and benefits of these additional services at that time.

BENEFITS
Each of the programs used in this study is designed and expected to benefit you and your children. Depending upon the individual case, benefits to your children might include improved behavior at home and school, fewer problems such as aggression, arguing or fighting, and less depression. Depending upon the individual case, benefits to you might include better relationships with all of your children, greater effectiveness in disciplining your children, better control of temper, and better feelings about yourself.

WHAT IF YOU DECIDE NOT TO PARTICIPATE?
If you choose not to volunteer for the research study, you and your children will be referred to the PAC program. You will still receive the same PAC services as those who volunteer for the study and are assigned to PAC by chance. You do not have to volunteer for the study in order to receive PAC services. If DHS or the court has ordered you to be in a program, you can either meet that requirement by participating in the study or you can meet that requirement by going to PAC without participating in the study.

COMPENSATION AND INJURY

If you are injured or upset by participating in the program, counseling or treatment for that injury is available to you. However, you or your insurance company will be required to pay the usual fees for that treatment. You should understand that no compensation will be available to you from the United States Department of Health and Human Services, Children's Hospital of Oklahoma, or the University of Oklahoma Health Sciences Center unless you are otherwise covered by their health insurance or other employee benefits. If you have questions or want further information about compensation or medical care, you may contact the Chief of Staff of Children's Hospital of Oklahoma at (405) 271-4790.

PARTICIPANT ASSURANCES

Participation in this study is voluntary. You have not given up any of your legal rights or released any individual or institution from liability for negligence.

You have the right to withdraw from this study at any time without penalty or loss of benefits to which you would otherwise be entitled. If you start the study and then change your mind and withdraw from the study, you will still be eligible for services in the PAC program. If you withdraw from the study, your treatment by and relationship with the doctors and organizations involved in the study will not be affected now or in the future.

Information collected by the study is confidential. When the results of the study are published, no names or any other identifying information will be included. Information from the two interviews (one at the beginning and one at the end) will be identified by number only and no names will be recorded on any tests or questionnaires. Information from the interviews will not be reported to DHS or the court or released to anyone unless you give us permission. If you wish to receive a copy of any research papers published in connection with this study, please inform Dr. Chaffin.

If you or your children have an open case with DHS or an open court case, the project will ask for your consent to release progress reports and coordinate services with your DHS case worker if you have one. This is standard in cases where DHS or the court is involved. If you wish, the study will release the scores from psychological tests or questionnaires to your counselor or other qualified professionals; however, this is entirely optional and up to you. The study will comply with the laws of the State of Oklahoma requiring all professionals to make a report when they suspect a child is being abused.

WHO TO CONTACT IF YOU HAVE QUESTIONS OR CONCERNS

If you have any questions about the study or if you need to report any problems or concerns, you should contact Dr. Mark Chaffin or Dr. Barbara Bonner at (405) 271-8858, Monday thru Friday from 8:00am until 5:00pm. Outside these hours, call (405) 823-3909 or call the Children's Hospital operator at (405) 271-4371 and ask them to contact either Dr. Chaffin or Dr. Bonner at home. If you have an emergency, you can call or come to the Children's Hospital Emergency Room and ask to speak with the mental health staff member on-call. If you have a question about your rights as a research participant, you may contact the Director of Research Administration, in the OUHSC Office of Research Administration at (405) 271-2090.

AGREEMENT

I have read this consent document and have had an opportunity to have my questions answered. I freely consent to participate in this study under the conditions described. I give my consent for Dr. Chaffin to obtain information from the Oklahoma Department of Human Services as described above. I will receive a copy of this consent form.

Please print the names of all individuals, including your children and yourself, for whom you are giving consent to participate:

_____ (myself)

My children

_____ _____

_____ _____

Signatures

_____ _____
Participant Date

_____ _____
Witness Date

_____ _____
Investigator Date

CHILDREN'S ASSENT

I have explained the study to the child participants named above in language appropriate to their age and level of understanding. The child participants have been given the opportunity to ask questions and to decide about participating. The signature of the parent and myself certifies that the children are agreeing to participate in this study.

_____ _____
Investigator or Assistant Date