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Children Who Die of Abuse: An Examination of the Effects of Perpetrator Characteristics on Fatal Versus Non-Fatal Child Abuse

by

Donald L. Dixon

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Social Work
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Keywords: Neglect and abuse, prior abuse reports, risk and protective factors, ecological perspective, paramours, history of violence

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Dedication

I would like to dedicate this dissertation to Willie Jeff and Maude Christine Pierce Dixon, my parents who, despite not achieving anything greater than a high school diploma, encouraged my sisters and brothers and me to always strive to achieve academic excellence. They were the ones who had aspirations for our success long before we could aspire ourselves. I would also like to dedicate this dissertation to my brothers and sisters and to my daughter, Crystal, who consistently badgered me to complete this work. They are and have always been an inspiration to me, and I will be forever grateful.

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I have always found in my life that my greatest successes were accomplished with the help of family, friends, and colleagues. This effort was no exception. The support, encouragement, and guidance offered me on this journey has been steady and constant, without with which I could not have made it through.

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Table of Contents

List of Tables v
List of Figures vi
Abstract vii

Chapter I: Introduction 1
Purpose of Study 3
Research Question/Hypotheses 5
Hypothesis 1 6
Hypothesis 2 6
Hypothesis 3 6
Hypothesis 4 6
Hypothesis 5 6
Dissertation Question 6
Child Abuse Defined 6

Chapter II: Literature Review 8
Ecological Theory 8
Focus of this Research 10
Risk and Protective Theory 11
Ecological Perspective and Risk and Protective Theory 14
Ecological Perspective, Risk and Protective Theory, and Child Abuse 16
Conceptual Framework 21
Study Risk and Protective Factors 24
Perpetrator Demographics 25
Age 26
Race/ethnicity 28
Gender 31
Economic Status 33
Academic Achievement 35
Marital Status 37
Alcohol and Substance use 39
Child Demographics 41
Age 41
Race/ethnicity 42
Gender 43
Case Characteristics 44
Previous Abuse Reports 44

Household Composition 47

Chapter III: Methodology 52
Purpose of the Study 52
Research Design 52
Target Population 54
Variables 55
Dependent Variable 55
Independent Variables 55
Selection of Participants 56
Procedures 60
Analysis 60
Strengths/Limitations 62

Chapter IV: Results 64
Data Selection 64
Child Age 64
Child Race 65
Child Gender 65
Hypothesis 1 72
Hypothesis 2 73
Hypothesis 3 74
Hypothesis 4 75
Hypothesis 5 75
Dissertation Question 76

Chapter V: Discussion 79
Interpretation of Findings 79
Additional Finding 87
Study Strengths and Limitations 87
Conclusion 90
Implications for Social Work Practice 93
Microsystem Level 93
Mesosystem Level 94
Macrosystem Level 94
Research to Practice 95
Implications for Future Social Work Research 96
References 98

List of Tables

Table 4.1: Child Demographics 66

Table 4.2: Perpetrator Demographics 68

Table 4.3: Bivariate Analyses of Perpetrator Characteristics 70

Table 4.4: Regression Coefficients..... 72

List of Figures

Figure 1: Conceptual Model 23

Figure 2: Child Demographics 67

Figure 3: Perpetrator Demographics 69

ABSTRACT

Approximately 2000 children die annually in the United States from abuse and neglect, but the interplay of factors such as perpetrator characteristics and family composition which place these children at risk have not been well-established. The review of the literature focuses on the correlation between child deaths resulting from abuse and perpetrator characteristics most associated with these deaths. Characteristics such as the perpetrator's age, race/ethnicity, gender, alcohol and substance use/abuse and/or sale, and prior history of abuse are among those examined. Additionally, these factors are examined within ecological and risk and protective factor theoretical frameworks.

It is argued that further research on perpetrator characteristics and the risk of fatal child abuse is urgently needed to identify those perpetrator risk factors that place children at great risk of death resulting from abuse. These findings will provide child welfare professionals an opportunity to offer intervention services that mitigate the risk to the child. In addition, this study employing multivariate statistical analysis will be used to inform the practice of child protection professionals so that they may better understand the personal characteristics of perpetrators and how those factors place children at risk of abuse and possible death.

Key words: Neglect and abuse, fatal child abuse, non-fatal child abuse, prior abuse reports, perpetrator characteristics, substance use, risk and protective factors, ecological theory

Chapter I: Introduction

There is little doubt child maltreatment is a widespread social problem affecting families of all social, economic, racial, and ethnic groups. From the creation of the New York Children's Aid Society in 1853 under the leadership of Charles Loring Brace to provide protection for neglected and abuse children to the 1960s, concern about and subsequent reporting of child abuse has grown dramatically. To understand and track child abuse nationwide the federal government enacted the Child Abuse Prevention and Treatment Act in 1974 (Wu, Chang, Carter, Ariet, Feaver, Resnick & Roth, 2004). Since then the number of reported child abuse cases in the United States has doubled to almost 900,000 a year.

Each year it is estimated that child abuse and neglect fatalities among children under age 18 range from 1000 to 2600 (Webster, Schnitzer, Jenny, Ewigman & Alario, 2003) with children under 5 years of age experiencing the highest rate of victimization (Stiffman, Schnitzer, Adam, Kruse, & Ewigman, 2002; Wu, Chang, Carter, Ariet, Feaver, Resnick & Roth, 2004). Children younger than 4 years of age are at greatest risk of severe injury or death and in 2008 accounted for 80% of child maltreatment fatalities (CDC, 2010).

Prevention of child fatalities has been a recent focus of child welfare professionals, particularly in the development of risk assessment tools. For example, adult perpetrators who abuse their children once are more likely to

repeat the abuse, thereby increasing the risk of fatal abuse (Sabotta & Davis, 1992; Sorenson & Peterson, 1994). This approach is different from the manner in which child protection has been approached historically. Since the 1960s the primary focus has been on prevention of re-injury to the child victim, but not much on detection of household and perpetrator risk factors that increase the likelihood of child deaths due to abuse and neglect. While this approach has yielded some good results, less attention has been given to understanding the impact that household composition has on placing child victims at increased risk of death due to abuse. Characteristics such as age, gender, race/ethnicity, educational achievement, marital status, and economic status of the perpetrator have not received adequate scrutiny. Many studies examine the role of alcohol and drugs, and domestic violence, but little attention has been given to the interaction of these variables and household composition in reducing or increasing risk to children.

Most studies are, in effect, epidemiological in nature in that they look at existing records of child deaths over a period of years. In using archival data of this sort, potentially important information is not included. For example, most studies do not consistently provide information about alcohol or substance use, or the personal attributes of the perpetrator. Moreover, fewer studies have attempted to analyze the role of household members in fatal child abuse. This study examines the interaction between family composition and perpetrator risk factors that contribute to deaths arising from aggressive acts toward children and whether that type of assault is

attributable to household members under-represented in data that tracks fatal child abuse as compared to non-fatal child abuse.

Additional research is needed to inform child welfare workers of risk factors, which could direct them to provide early intervention services to mitigate the risk to the child. Studies using multivariate approaches may result in identifying combinations of risk and protective factors that inform practice. There is scant data available to explain why some high risk families abuse their children and others do not. In essence, little attention has been paid to the individual characteristics of perpetrators and how those characteristics influenced their aggressive behavior toward their child victims.

Purpose of Study

The purpose of this study will be to identify the risk and protective factors associated with the characteristics of perpetrators in fatal child abuse cases by comparing and contrasting them to the risk and protective factors associated with perpetrators where abuse is verified, but does not result in child fatality.

A review of the literature related to the influence of household composition on fatal child abuse identified two articles to date on the subject (Stiffman, Schnitzer, Adam, Kruse and Ewigman, 2002; Schnitzer and Ewigman, 2005). Castro et al (2006) identified parental and youth risk factors as predictors of illegal substance use among adolescents ages 12 to 20. The study method consisted of two stages of interviews with fathers, mothers and adolescents one year apart. The study concluded that paternal drug use and perceived maternal drug use at stage 1 were highly correlated with higher stages of

adolescent substance use at stage 2. Fathers who reported more frequent illegal drug use in the past year had children who reported higher usage at stage 2. Similarly, youth who perceived that their mothers had used illegal drugs more frequently in the past year also reported higher illegal substance use at stage 2. This study, while not explicitly focusing on household characteristics, nevertheless identifies family characteristics associated with risky behavior and potentially negative outcomes for the youth in those families.

By contrast, although there is limited research specifically related to household composition, there is extensive research on perpetrator characteristics of age, race/ethnicity, gender, economic status, academic achievement, marital status, and alcohol and substance use. In none of the studies, however, is there an attempt to link individual perpetrator characteristics to the type of household in which he or she lives. Moreover, in households found to be most lethal to children, child abuse fatalities are not always the resulting outcome. These findings raise the question of which households combined with specific perpetrator characteristics are most likely to produce fatal child abuse outcomes.

In the two studies that examined the role household composition plays in child abuse fatalities there is no attempt to identify specific perpetrator characteristics that most contribute to those deaths. Both studies concluded that the household composition most likely to result in fatal child abuse is one that contains a single mother and at least one adult unrelated to the child. Within this type of household, the most dangerous to children and the

one most likely to produce fatality is a single mother living with her boyfriend.

Studies that examine perpetrator characteristics include child maltreatments of all kinds, including neglect. They do not discriminate between those deaths resulting from abuse and those resulting from the larger classification of child maltreatment. In effect, there are no studies that examine the relationship between specific perpetrator characteristics and child fatalities due to abuse alone by contrasting them to child abuse cases where perpetrator characteristics do not contribute to death of the child victim. This study will examine that relationship to determine the most dangerous perpetrator characteristics that contribute most to the likelihood of a child dying as a result of abuse. This will be conducted within the context of an ecological and risk and protective factor model that allows an assessment of the perpetrator within the family unit and the extended environmental factors that increase or decrease risk of fatal child abuse.

Research Question / Hypotheses

Based on previous studies regarding the prevalence of fatal child abuse, research hypotheses were developed. While the literature has shown that child abuse is prevalent in the United States, little attention has been given to the role specific perpetrator characteristics play in child abuse deaths alone. Therefore, the hypotheses of this study are as follows:

Hypothesis 1. It is predicted that there will be a statistically significant difference between perpetrators of fatal and non-fatal child abuse cases with perpetrators of fatal child abuse more likely to be paramours.

Hypothesis 2. It is predicted that perpetrators will be significantly younger than their counterparts in cases where there is non-fatal child abuse.

Hypothesis 3. It is predicted that where there is a case of fatal child abuse, White, non-Hispanic males will represent the largest number of abusers, but Black and Hispanic males will be over-represented in comparison to their respective counterparts in cases of non-fatal child abuse.

Hypothesis 4. It is predicted that in cases of fatal child abuse, the perpetrators are more likely to have used or abused illegal substances than their counterparts in cases of non-fatal child abuse.

Hypothesis 5. It is predicted that there will be a relationship between fatal child abuse and the perpetrator's total number of arrests.

Dissertation Question

What risk factors associated with perpetrator characteristics contribute most to increased risk of fatal child abuse as opposed to non-fatal child abuse?

Child Abuse Defined

Since records of fatal child abuse used for this study will be taken from cases in Florida, the definition of child abuse is taken from Florida statute. Chapter 39.01(31) defines abuse as follows:

"Harm" to a child's health or welfare can occur when any person inflicts or allows to be inflicted upon the child… such injury…that includes willful acts that produce the following specific injuries:

a. Sprains, dislocations, or cartilage damage.

b. Bone or skull fractures.

c. Brain or spinal cord damage.

d. Intracranial hemorrhage or injury to other internal organs.

e. Asphyxiation, suffocation, or drowning.

f. Injury resulting from the use of a deadly weapon.

g. Burns or scalding.

h. Cuts, lacerations, punctures, or bites.

i. Permanent or temporary disfigurement.

j. Permanent or temporary loss or impairment of a body part or function.

Chapter II: Literature Review

Ecological theory

An ecological model of social work practice has been important to the profession since the 1970s (Ungar, 2002) when it was introduced into the social work literature by Urie Bronfenbrenner. The theory posits that the quality of life of children is impacted at various levels by their family, neighborhood, community, and larger sociopolitical environments (Bronfenbrenner, 1979). Each level is defined in its proximity to the person at the center of the system and include the microsystem (most proximal), mesosystem, exosystem, and macrosystem (most distal). Almost ten years after advancing an ecological perspective to explain human interactions, Bronfenbrenner (1989) amended his original ecological model to reflect the influence of the person at the core of the microsystem (in this study, the perpetrator and child victim) and changes across time have on personal outcomes. He defines this interplay as the person-context model in which characteristics of the person and the environment are taken into account. Accordingly, Bronfenbrenner offered amended definitions of the micro and macrosystems he originally advanced as follows with the updated changes in italics:

> A microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features *and containing other persons with distinctive characteristics of temperament,*

personality, and systems of beliefs. Examples of such *s*ettings include home, school, peer group, or the workplace.

A mesosystem consists of the overarching pattern of micro, meso, and exosystems characteristics of a given culture, subculture, or other broader social context, *with particular reference to the developmentally-instigative belief systems, resources, hazards, life styles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems.* The mesosystem may be thought of as a societal blueprint for a particular culture, subculture, or other broader social context. Examples include cultural beliefs about discipline or laws that establish minimum wage standards.

Bronfenbrenner's expanded definition at the microsystem level was developed in part to account for the possibility that the individual characteristics of the person (including the child) at the center of the ecological system, in their interaction with others may contribute to whether there are a significantly high number of risk or protective factors. In the person-context model characteristics of both the person and of the environment are taken into account jointly. Fraser (1997) wrote that ecological theory is nestled in a multisystems perspective and is fully compatible with a risk and resilience perspective. He stated further that the multisystems ecological perspective admits to reciprocated causation; in so doing, it permits risk and protective factors to operate without the attendant baggage of being thought of as causes. On balance, when we invoke an ecological and multisystems paradigm, we do not assume that all risk and protective factors operate as direct causes of child behavior or health.

The challenge in using an ecological approach to identify characteristics most associated with child maltreatment is to determine those factors that singly or in combination place children at highest risk of fatal

child maltreatment. It is not clear whether the critical factor is economic, family structure or size, or a combination of these factors. However, what is clear is that child abuse is a community problem most often related to the social and economic situation of the locale (Krishnan & Morrison, 1995). Family stress associated with financial difficulties, chronic poverty and unemployment is one major area that may overwhelm a family's capacity to function and care for its children (Little & Kantor, 2002).

Ecological theory focuses on family systems to detect and explain variables that place children at risk of abuse. It allows the researcher to evaluate causal variables at multiple social levels and determine if one level of influence has greater affect than another and how variables at multiple levels interact. There are, however, methodological challenges that must be overcome. To obtain an unbiased contextual effect on maltreatment outcomes, it is necessary to control for confounding parenting variables (Zielinski & Bradshaw, 2006).

It is important to note that this study is conducted within two theoretical frameworks; ecological and a risk and protective factors. While it is traditionally believed that research conducted within an ecological framework needs to focus on the role various levels of the framework plays in the impact on the person(s) at the center of the model, focusing on the implications for individuals at a single level does not inherently invalidate the appropriate application of the theory. This research study has been focused only at the microsystem level of the ecological framework because it explores factors only related to perpetrator and child victim characteristics. Although

child maltreatment is a topic that has received much attention over the years, there are few studies that examine the relationship between perpetrator characteristics in abuse cases and which specific ones place children at greatest risk of death. The value of this approach, then, is in its attempts to ask and answer a set of questions not found anywhere else in the literature; that is, who are the persons who abuse children to death and how are they different, if in any way, from persons who abuse, but do not kill their child victims? From that perspective, the researcher believes that conducting this research within an ecological framework is not only appropriate, but stands to offer important new findings to social work literature and practice at the microsystem level.

Risk and Protective Theory

Social workers and other professionals are constantly confronted with the effects of poverty, family violence, poor housing, inadequate health care, and dangerous neighborhoods. They observe, however, that while some people, particularly children, are adversely affected by these personal, family, and community factors, others seem not only unaffected by them, they thrive in environments where these factors exist. Thus, negative factors in some cases may be protective factors in others, dependent on their affect. Fraser (2003) defines risk factors as any influence that increases the probability of harm (the onset) that contributes to a more serious state, or maintains a problem condition. Fraser, Kirby and Smokowski (2004) offer a slight variation on this definition by defining risk factors as any influences that increase the probability of onset, digression to a more serious state, or

maintenance of a problem condition. Circumstances that make a factor a risk versus a protective factor are rooted in the context in which they occur. In discussing contextual influence, Fraser, Kirby and Smokowski (2004) refer to the conditions affecting the outcome of the impact of a particular variable as contextual effects which are environmental conditions that affect vulnerability. These conditions are multidimensional and nestled in the various levels of a larger ecological system. For example, the academic failure of a child in school may not lie in his or her aptitude, but may very well stem from domestic violence in the home, causing the child to divert his or her attention from school work to the safety of one or both parents. A slight deviation in the home (context), however, can produce radically different results. In this example, the presence of a grandparent in the child's home may provide the comfort and safety he or she needs to focus on the importance of succeeding in school, thus mitigating the negative influence of the domestic violence between his or her parents. This becomes the differentiating effect of a variable that increases or decreases its risk potential. Fraser (2003) defines protective factors as those internal and external resources that promote positive developmental outcomes and help children prevail over adversity.

Like risk factors, protective factors include dispositional, familial, and extra-familial characteristics. In aggregate, they are the positive forces that contribute to adaptive outcomes in the presence of risk (Garmezy, 1993). It should not, however, be concluded that risk factors distribute equally across populations, even those living in close proximity to each other. Garmezy

(1985) described three major categories of protective factors on the basis of his early reviews of the literature: individual characteristics, such as good intellectual skills, positive temperament, and positive views of the self; family qualities, such as high warmth, cohesion, expectations, and involvement; and supportive systems outside the family, such as strong social networks or good schools. Any one or several of these factors in combination may be in play at any given time and may affect individuals within a system in varying degrees and with vastly different outcomes. The net effect of this aggregation of factors, when producing perseverance in the face of great odds, is referred to in the literature as resilience. In short, personality characteristics of the child interact with small and large environments such as family, friends, school personnel, and many people in the community to create the conditions that will either foster or inhibit positive growth and development (Condly, 2006). Cicchetti (2004) defines resilience as a dynamic developmental process reflecting evidence of positive adaptation despite significant life adversity.

In a qualitative study that explored the perspectives on cultural risks and protective factors in cases of sexual abuse among child protection professionals in Kenya Plummer and Njuguna (2009) offers a contextual definition of community. The researchers define community by tribal culture, where people strongly identify with their tribal roots, including parts of the country where their families originally lived. This definition is contrasted to definitions in western communities where the reference is more to a loose affiliation of people living in close proximity sharing parks, community

services and local politicians. The researchers identified individual and family characteristics as protective factors, but risk factors were more associated with social changes, patriarchy (male dominance and violence), and gender roles and practices. The researchers concluded, however, that in the views of professionals risk and protective factors operate at the cultural/community level, and in examining factors that contribute to safety or risk or sexual abuse, these professionals rarely mentioned individual child or family level variables.

Ecological Perspective and Risk and Protective Theory

From an ecological perspective, Bronfenbrenner's (1989) person-context model takes into account the interplay of environmental factors that may simultaneously place the child at risk of abuse or provide protection from it. He posits that there may be interplay of factors at various levels of the ecosystem and that these factors may impact the child from multiple directions. This concept is referred to as cumulative risk in which particular environmental conditions have been shown to produce different developmental consequences depending on the personal characteristics of individuals living in that environment. Although studying multiple dependent and independent variables often challenge statistical methods, specificity in a risk and protective model that investigates variable impact requires assessment at multiple system levels. Multiple settings and multiple systems must be examined simultaneously because risk factors tend to cluster in the same individual. As children often experience many risks and recurring

stressors, focusing on a single risk factor does not address the reality of most children's lives (Luthar, 1991; Sameroff, Guttman, and Peck, 2003).

Fraser (2004) observed that the multisystems ecological perspective admits to reciprocated causation; in doing so, it permits risk and protective factors to operate without the attendant baggage of being thought of as causes. Furthermore, risks are thought to accumulate, or "bundle" together, and the relationships between risk factors and outcomes are conceptualized as being reciprocal (Fraser & Galinsky, 2004).

Fong and Greene (2009) in their observations of risk and resilience among immigrant resettlement purport that risk and resilience is an ecological concept that is a multisystemic approach encompassing small-scale microsystems, mesosystems, exosystems, and macrosystems. Several benefits are derived from this viewpoint. They are: (a) an individual is understood within his or her relationships with other social systems; (b) resilience is viewed as affected by any system in the individual's life space; and (c) families, communities, and societies are perceived as having collective resilient properties.

For this study in which perpetrator risk and protective factors affect whether a child who is abused dies or does not die, the observations of Fraser are significant. In one case, perpetrator characteristics may be risk factors and in others, they may be protective factors.

The strength of risk and protective theory is in its ability to articulate the multisystem and multifactor interplay that influences outcomes for children and other individuals at the center of the ecological system. This

approach, while not purporting to suggest causation, nevertheless reflects the often sophisticated interaction of multiple life variables on individual outcomes. Its limitations lie in the fact that, while accounting for multiple variables, little research as been conducted on the influence that biological and genetic variables have as risk and protective factors on child and other individual outcomes. In addition, few social science researchers of risk and protective factors have conducted their studies at multiple levels of analysis as has been done in the neurosciences, developmental psychopathology, and genetics. While not pursuing a medical model investigation, this study will be conducted using multiple analytical analyses.

Ecological Perspective, Risk and Protective Theory, and Child Abuse

To fully understand the conditions in which some families abuse their child and others do not, one must consider the possibility that no single factor contributes to the abuse of a child. Studies taking this approach began with the work of Garbarino (1970) and were expanded upon by Belsky (1978 and 1984), Grabarino and Kostelny (1992) and Schultz et al (2009). Multiple factors at the individual child and perpetrator (microsystem) level, those at the family and neighborhood level (mesosystem), the cultural values imbedded at all of these levels (exosystem), as well as those at the political and policy levels (macrosystem) of a community affect child abuse. Abuse is created by a confluence of forces which lead to a pathological adaptation by the caregiver and, to a lesser extent, the child. Parents, children, and their immediate environment tend to complement each other in cases of child abuse.

This is significant because of the growing agreement that a pattern of child abuse requires the compliance or acquiescence of persons other than the victim-perpetrator dyad in most cases (Garbarino, 1977). Thomlison (1997) observed that risk and protective factors for maltreated children can be thought of as biological and psychological in nature. Biological risks include birth or health complications, low intellect and developmental abnormalities. These biological factors are identified as stressful for parents, and their presence is thought to elevate the potential of abusive or neglectful parenting behavior, or both. The presence of biological risks may explain--at least in part--why children under age three are considered more vulnerable to physical abuse and neglect and why children under age five are at increased risk of death.

Thomlison (1997) observed further that psychological risk factors include a child's temperament, behavior, and mood. In young children, temperament, aggression, and noncompliant behavior place them at increased risk of abuse. Of particular importance, especially with regard to the design of preventive and interventive services, is the need to identify factors that protect against child abuse and neglect or buffer children exposed to maltreatment (Thomlison, 2004). The author expanded to a description of risk and protective factors presented in her 1997 work to include child, family and environmental risk factors.

Belsky (1978) discussed three theoretical models for creating a framework in which child abuse may be understood by researchers and practitioners; the psychiatric model, the sociological model, and the effect of

the child on caregiver model. In the psychiatric model the assumption is that factors within the individual abuser are responsible for child maltreatment. Although presentation of this model seems to suggest serious psychiatric disturbance on the part of the perpetrator, that is not always the case. It is more likely rooted in a distorted perception of the nature of childhood. Rather than viewing the child as a dependent organism who must be cared for and nurtured, the perpetrator expects to be cared for and nurtured by the child. This model suggests that efforts to prevent or remediate child maltreatment should be directed at the perpetrator of the abuse rather than at social conditions or the abused child themselves.

Belsky (1978) further theorized that the sociological model is founded upon the premise that it is forces within the society, rather than within the individual, that are primarily responsible for the occurrence of child abuse. This model is rooted in the belief that when families are subjected to stress (risk factor), violence is likely to result, and child abuse is just one form this violence may take. Some other risk factors include unemployment, social isolation, marital discord, and household disorganization.

The effect of the child-on-caregiver model suggests that not only does the parent or caretaker have an affect on the child, the child, in turn, has an affect on the caregiver. This model suggests that the more difficult the child's behavior or the presence of a physical or psychological illness in the child, he or she is placed at greater risk of abuse than his or her siblings who do not possess similar characteristics. The author concludes that no single model can adequately account for child abuse. There are parents or

caretakers with psychiatric histories that do not abuse their children; parents who live in socially stressful situations and children identical to abused children who do not illicit abuse. This suggests that the interplay between adult, societal, and child characteristics is at work in the abuse process.

Garbarino (1977) makes a similar argument to that posited by Belsky. In his work on the human ecology of child maltreatment, Garbarino proposes that an ecological approach is the best framework for studying child maltreatment because it conceives of the environment topologically as an interactive set of systems "nested" within each other. Additionally, an ecological approach asserts the need to consider political, economic, and demographic factors in shaping the quality of life for children and families. Accordingly, the "problem" of child abuse can only be understood as part and parcel of the overall society's commitment to the welfare of children and families.

The analyses of Schultz et al (2009) supported the idea that social competence, adaptive functioning skills, and peer relationships are related to positive outcomes for children involved in child maltreatment cases.

In an effort to establish a conceptual model for research Garbarino (1977) identified two factors necessary for child maltreatment: a mismatch of parent to child and of family to neighborhood and community. Using an ecological model, he concluded that there are increasing numbers of families vulnerable to the conditions which produce the maltreatment of children due to changing patterns of family structure, economic patterns, and social conditions. First, for child abuse to occur within family microsystems there

must be cultural justification for the use of force against children, and second, there must be isolation from positive support systems. This factor pertains to the relationship of microsystem (i.e., family systems or victim-perpetrator dyad) to mesosystem (i.e., community and neighborhood). Garbarino and Sherman (1980) conducted a study of high-risk neighborhoods and high-risk families. They used multiple regression analysis to select comparison neighborhoods based on three criteria: 1) large discrepancies between actual and predicted child maltreatment rates, 2) high child maltreatment rates, and 3) similar socioeconomic and racial profiles. The researchers concluded that differences in risk scores at the family level were associated with differences in family stresses and supports. Differences at the neighborhood level were associated with family association with preventive rather than treatment agencies. High-risk neighborhoods were socially impoverished and low-risk neighborhoods, though economically deprived, evinced high levels of social engagement. The study's limitations lie in the inability to determine if high-risk neighborhood characteristics influence family functioning or whether poorly functioning families drift toward high-risk neighborhoods; or whether political and economic forces that shape residential patterns encourage them to form homogenous clusters. However, any comprehensive review of the available evidence leads to the conclusion that child maltreatment is concentrated among socially, economically, and psychologically "high risk families". Even if children in high risk families do not suffer injuries due to abusive incidents they run a high risk of damage.

In a study examining the characteristics and profiles of children, 196 maltreatment perpetrators in Florida, including 126 who abused their child victims to death from 1999 to 2002, Yampolskaya, Greenbaum and Berson (2009) concluded that being a biologically unrelated caregiver was the strongest predictor of fatal child maltreatment. The study group was perpetrators involved in fatal child maltreatment cases and the comparison group was perpetrators involved in non-fatal child maltreatment cases. The fatal child maltreatment group was selected as a sample of fatality cases reviewed by the Florida Death Review Team from 1999 to 2002 and matched with 70 non-fatal cases selected from the Florida Child Welfare Information System (HomeSafenet) for the same period. Matching was done using the propensity score method first advanced by Rosenbaum and Rubin (1984).

In their work on social work practice within a diversity framework Greene and Kropf (2009) caution the reader not to forget that there is often as much diversity within a particular group as there is between groups. Therefore, each client must be seen as an individual who may or may not subscribe to general group norms and beliefs and who should be asked to differentiate his or her experiences from those of the reference group. This differentiation becomes necessary because it recognizes the strengths and resilience of individuals even though there are obvious threats to his or her group.

Conceptual framework

The framework in which children who die of abuse is conceptualized within an ecological and risk and protective factor model that integrates the

theoretical perspectives of ecological theory (Garbarino, 1977; Bronfenbrenner, 1989; Counts et al, 2010), risk and protective theory (Luthar, 2003, Fraser, 1997; Fraser, 2004; Condley, 2006; Schultz et al, 2009), and perpetrator characteristics contained in a number of studies (Lauderdale, Valiunas, and Anderson, 1980; Schloesser, Pierpoint and Poertner, 1992; Connelly and Straus, 1992; Lucas et al. 2002; Jason and Andereck, 1983; Garbarino, 1977; Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant, 2000;Garbarino & Sherman, 1980; Garbarino, 1977; Jason and Andereck, 1983; Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant 2000; Schloesser et al 1992 and Margolin 1992). This model is presented in Figure 1.

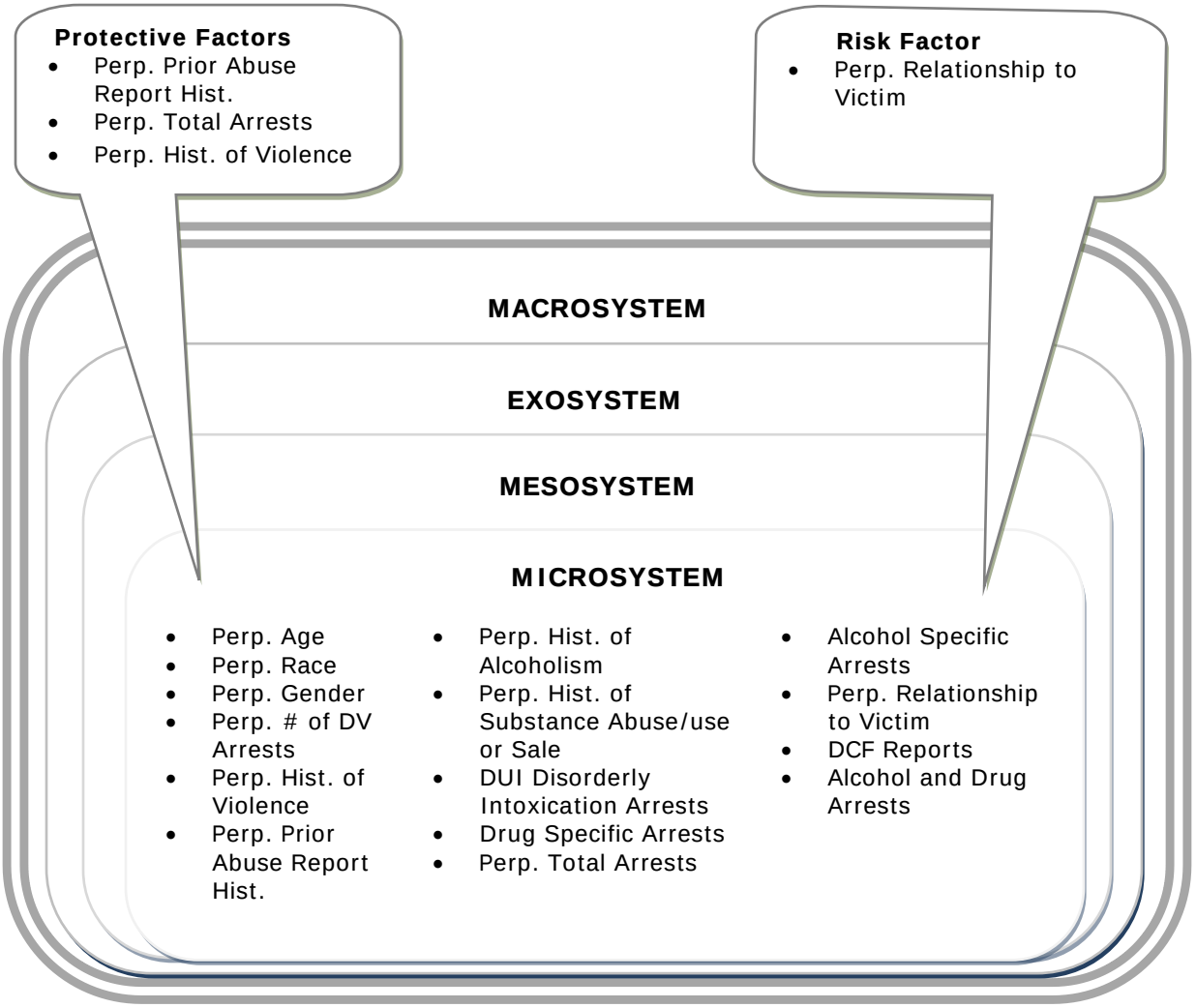

Figure 1: Conceptual Model

The basic premise of this model is that any factor at any level of a family's ecological system, particularly the characteristics of the perpetrator (i.e., age, race, gender, history of violence, relationship to the victim, and drug or alcohol arrests, substance abuse/use and/or sale, and criminal history, etc.) can constitute factors that may increase risk of death in child abuse cases. These factors may act singly or in combination to increase risk of death. By inference then, the absence of these factors in child abuse

reports may inform child protection professionals that, although there are issues of concern within a family, the risk of serious abuse resulting in death may be low.

The protective factors contained in this research appear to be risk factors associated with perpetrator characteristics. Certainly no one would argue otherwise. However, this finding may be due in part to the absence in the Department of Children and Families database of perpetrators marital and economic status, and level of educational achievement originally hypothesized in this study. In addition, these apparent risk factors may also appear as protective factors, not because they are personal assets of the perpetrators in this study, but more so because their presence in the alleged perpetrator profile trigger a child safety response by child care professionals in a large number of child abuse investigations, thereby resulting in the child being placed in a safer environment.

This inquiry will attempt to determine under what conditions, and how perpetrator and child characteristics affect the outcomes in fatal and non-fatal child abuse cases.

Study Risk and Protective factors

Child abuse and neglect was first identified as a problem by the medical profession in the early 1960s. As such, the initial conceptualizations of the problem tended to discount social factors as playing a significant or causal role in the etiology of abuse and focused primarily on the medical and psychiatric affects of the abuse rather than on its causes. The work of Garbarino in the 1970s expanded the focus to understanding social,

economic, family dynamics and other ecological correlates contributing to abuse. Even so, since the pioneering studies by Garbarino, a number of studies have analyzed family risk factors that place children at risk of abuse and neglect, but few have attempted to isolate perpetrator risk factors most associated with child abuse fatalities. It is useful, then, to examine findings concerning risk factors in both abuse and neglect cases even when the maltreatment did not result in death to the child because abuse or neglect always precedes the act that results in the death of the child. Rutter (2005) observed that despite significant literature on environmental risk factors suggesting that environmental risk effects distribute across populations as a whole, empirical research findings have concluded that some risk conditions are more prevalent among some individuals, households, and communities than others. In a review of studies using elements of Bronfenbrenner's ecological theory, Darling (2007) supported this reasoning by postulating that different environments will have different affordances and will be responded to in different ways by different individuals. Experienced and objectively defined environments will not be randomly distributed with regard to the developmental processes and the individuals one observes within them. Rather, one will find ecological niches in which distinct processes and outcomes will be observed.

Perpetrator Demographics

For this study characteristics of perpetrators in multiple domains are examined as discussed in the literature going back to the mid-seventies.

Age. A number of studies have found correlations between perpetrator age and increased incidences of child abuse. These have included population-based studies (Herman-Giddens, Marcia, Smith, Jamie, Mittal, Manjoo, Carlson, Mandie and Butts, 2000; Connelly and Straus, 1992) or studies analyzing the age of the parent as a factor in the quality of the parent-child relationship and the adequacy of pre-natal care (Schloesser, Pierpont and Poertner, 1992; Jason and Andereck, 1983; Mersky, Berger, Reynolds and Gromoske, 2009).

In the population-based case series study conducted by Herman-Giddens, et al (2000) the researchers examined all deaths among live-born infants 0 to 4 days of age reported to the North Carolina Medical Examiner for the sixteen year period from January 1, 1985 through December 31, 2000. During the study period North Carolina had a total of 1,644,718 live-born infants, thirty-four of whom died 0 to 4 days following birth by homicide or discarding where the perpetrator was either confirmed to be a parent (n=29) or likely to have been the parent(n=5). Mothers were the perpetrator in each case and their mean age was 19.1 years (range, 14-35 years).

Schloesser, Pierpont and Poertner (1992) used a Limited or Partial Active Surveillance evaluation method carried out by the Kansas Department of Health and Environment during two time periods: 42 months between 1975 and 1980, and 60 months between 1983 and 1989. The researchers correlated birth and death certificates with information in the Kansas Child Abuse and Neglect Registry and included an analysis of 104 cases of

suspected and/or confirmed fatalities of infants and young children ages 0 to 4. The study concluded that during the two study periods 73.3% of mothers began childbearing before age 20 and in 44.6% of the cases the mother was less than 20 year old when her child died of child abuse. Jason and Andereck (1983) had similar findings in their study of fatal child abuse in Georgia.

Kajese et al (2007) examined the characteristics of child abuse homicides gathered from the Kansas Child Death Review board from 1994 to 2007. The researchers discovered that of a total of 170 cases reviewed the majority of victims were females (56%) and White (79%), followed by Black females (17%). One to two year olds accounted for the largest percent of victims (34%) and the largest percent (41%) were children of single mothers.

Mersky et al (2009) examined the associations between individual, family and extra-familial factors and child and adolescent maltreatment. The researchers analyzed 1,411 participants in the Chicago Longitudinal Study where there were verified incidences of maltreatment and who attended public kindergarten programs in 1985-1986. The matched comparison group was 550 children who attended other public schools with kindergarten programs in the Chicago Effective Schools Project. Mothers' age was one of several family variables analyzed. The researchers found that almost twice as many children were neglected as were physically abused and the younger the mother the greater the likelihood that she would abuse or neglect her child. The findings suggest that a 1-year increase in maternal age was associated with a 7.5% reduction in the likelihood of maltreatment.

The first two studies, along with the study by Mersky et al focused heavily on the correlation of parental age and child abuse fatalities. The study by Kajese et al focused primarily on the gender of the perpetrator and victim, and the marital status of the perpetrator.

While these study methods provide important data for the understanding of child abuse, they have their limitations. First and foremost, selecting cases from large databases can result in an inaccurate count of actual cases. Secondly, each confirmed case is the product of an evaluator's judgment, and that judgment lends itself to inconsistent findings from evaluator to evaluator and to differing philosophies that prevail in different regions of a county or a state. And finally, disproportionate ethnic and racial representation may be the product of confusion of poverty with abuse by some evaluators.

Race/ethnicity. Perhaps the study of no single variable has produced greater variability in findings than whether race is a significant factor contributing to the incidence of child abuse. Some researchers have concluded that it plays a significant role (Lauderdale, Valiunas, and Anderson, 1980; Schloesser, Pierpoint and Poertner, 1992; Connelly and Straus, 1992; Lucas et al. 2002; Jason and Andereck, 1983; Garbarino, 1977) while others have concluded race plays little to no significant role (Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant, 2000). Still other studies focus on appropriate and/or over-representation of racial or ethnic groups in child abuse outcomes (Lucas et al, 2002; Dubowitz et al, 2011).

Lauderdale, Valiunas, and Anderson (1980) used a retrospective study method to collect data from the Texas Department of Human Resources Central Registry on validated cases of abuse and neglect from 1975 to 1977. The ethnic composition of the at-risk population was 61% Anglos (in other states referred to as Caucasians), 15% Blacks, and 24% Mexican-Americans. These statistics were compared to the racial and ethnic composition of Texas taken from the 1970 census, which revealed that in a population of 12 million, Anglos represented 69% (61%), Blacks 12% (15%), and Mexican-Americans 19% (24%). They found that abuse, defined in their study as an outburst of violence, was more predominant among Anglos who accounted for 33.5% of all validated maltreatment cases than it was among Mexican-Americans and Blacks (25.2% and 29.4% respectively). However, when compared to their representation in the general population, Mexican-Americans and Blacks were over-represented.

The Florida Child Death Review Committee annually reports that Whites account for about 60% of child abuse fatalities while blacks, who represent about 13% of the population, account for approximately 38% of child abuse fatalities. Whites represent 78% of the population and Blacks represent approximately 15% of the population according to 2000 census data, meaning that although Whites account for most of the child abuse deaths studied by the Child Death Review committee, they are under-represented and Blacks are over-represented. These data are consistent with national data and compare favorably with findings of Lucas, Wezner, Milner, McCanne, Harris, Monroe-Posey and Nelson (2001).

Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant (2000) conducted a retrospective medical record review of closed head injuries in child abuse cases at a pediatric tertiary care center in North Carolina from January 1992 to July 1997. The researchers' study question was whether race or ethnicity was a predictive factor in shaken baby syndrome. A total of 101 cases were selected in which race/ethnicity was classified into White (62%) and non-White (38%). The researchers concluded that although the rate of abuse was slightly higher for non-Whites than Whites, the differences were not significant at the .05 probability level. Thus, they concluded that race was not a predictor of shaken baby syndrome.

The study's principle weakness lies in the fact that case records were taken only from one pediatric tertiary care center in North Carolina and may not have represented those cases that were referred to other general hospitals in the area, the ones more likely to attract a disproportionate share of poorer, thus non-White shaken baby cases. In addition, the possibility of an inaccurate diagnosis of shaken baby syndrome is higher at non-specialty hospitals than at pediatric care centers, making under-representation more likely.

Dubowitz et al (2011) examined data taken from a ten-year longitudinal study of 332 low-income African-American families recruited from three urban university-based pediatric clinics from 1989 through 1992. Although this study did not focus primarily on race/ethnicity, its findings confirm the notion that race and poverty are disproportionately distributed in African-American communities in most U.S. cities.

Eligibility criteria included child age less than 40 months, gestational age greater than 36 weeks, birth weight ≥ 2500 grams, an no congenital problems or chronic illnesses. The researchers concluded that 43% of the families were reported to Child Protective Service (CPS) at least once. Sixty-five percent were for neglect, 27% for physical abuse, and 8% for sexual abuse. Of those cases reported for abuse the average age of the mother at birth was 23.1 years, 50% had less than a high school education, 85% had never been married, and 22% reported having used drugs.

Gender. Males commit the large majority of homicides of all types and in 2005 accounted for 65.3% of all homicides (Bureau of Justice Statistics). Similar, though smaller percentages, of males were found to be the perpetrators in fatal child abuse cases by Jason and Andereck (1983), Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant (2000), Schloesser et al, (1992), Margolin (1992), and Cavanaugh, Dobash and Dobash (2007) while Lucas et al (2002) and Starling, Sirontnak, Heisler and Barnes-Eley (2007) found higher rates.

Margolin (1992) studied factors most associated with the over-representation of mother's boyfriends. To establish a baseline comparison to determine over-representation, the researcher conducted interviews with 159 single mothers who gave birth between May 1984 and April 1990 in a large Iowa county. The focus was to establish the percent of time the mothers' boyfriends were placed in the role of providing non-parental child care and compare the incidence of child abuse committed by them in a population of 539 substantiated physical abuse cases during the study period. Among the

159 mothers interviewed, 108 had never been married, and 51 had been divorced, separated, or widowed. Twenty mothers (12.7%) reported living with a boyfriend who was not their child's father. Using a chi-square statistical test of association, the researcher concluded that although mothers' boyfriends performed only 1.75% of non-parental child care, in 290 of the 539 (53.8%) physical abuse cases the boyfriend was the perpetrator. In their study of 104 Kansas Child Abuse cases Schloesser, Pierpont and Poertner (1992) concluded that the father, stepfather, or boyfriend accounted for 56.7% of child abuse deaths in Kansas during two study periods between 1975 and 1989.

As with most studies using data taken from the conclusion of child abuse investigation professionals whose judgment is subject to be affected by wider community beliefs about unrelated adults with children, it is possible that mothers' boyfriends were over-reported to child protection agencies.

In their study of victim, perpetrator, family and incident characteristics of infant and child homicides, Lucas et al (2002) used a retrospective study method to review 32 substantiated fatal child abuse cases on 60 factors in the United States Air Force from September 1985 to June 1997. Child victims were stratified by age into three categories; infants between 24 hours and 1 year; children between 1 and 4 years; and children between 4 and 15 years. Probability values for comparison across groups were obtained by calculating chi-square statistics and one-way analyses of variance with follow-up New-Keuls analyses. For all fatal-abuse age groups, the gender of

the perpetrator was more than likely to be male than female. The infant group perpetrators were 84% male, the young child group perpetrators were 75% male, and the child group perpetrators were 75% male. The researchers concluded that the incidence of fatal abuse by male perpetrators was 1.8 times that of female perpetrators.

This study's strengths are in its focus on Air force families, a subset of families in some communities. As a result of strict military reporting requirements and the availability of employment of its personnel, lack of adequate employment can be ruled out as a factor contributing to the study findings. Its weakness lies in the problems associated with conducting retrospective studies using data based on individual judgment. Thus, variability is difficult to control for or assess.

Cavanagh et al (2007) examined the backgrounds of fathers in twenty-six cases who fatally abused their children and the context in which these homicides occurred. They found that as a group, the fathers were undereducated, underemployed with significant criminal histories. All victims were under four years of age and sixty-two percent of the offenders were stepfathers. The researchers concluded that fathers who perpetrate fatal child abuse have a propensity to use violence against their intimate partners and children.

Economic status. In the study by Margolin (1992) of the over-representation of mothers' boyfriends in fatal child abuse, single mothers were more conspicuously poorer than married, divorced, separated, or widowed mothers. Half earned less than $5,000 per year and a third earned

between $5,000 and $15,000 per year. By contrast, the median annual family income for married mothers was between $35,000 and $45,000.

Spearly and Lauderdale (1983) used an ecological framework to examine child abuse and neglect data collected through the statewide Child Abuse Central Registry in 246 Texas counties. An ecological framework for explaining child maltreatment attempts to integrate seemingly divergent etiological points of view into a multifactor framework in which individual and family characteristics interact with characteristics of the broader cultural environment. Using a series of hierarchical multiple regression analyses, the researchers concluded the greater the proportion of families with annual incomes over $15,000, the lower the county maltreatment rate. However, when abuse and neglect were considered separately, greater economic resources were significantly associated with lower county rates of neglect, but not abuse. Higher abuse rates were associated with greater proportions of single mothers.

In their study of fatal child abuse in Georgia, Jason and Andereck (1983) used odds ratios in a multiple regression statistic to conclude that higher fatality rates were found in poor, rural White families (3.3/100,000 children) and in poor, urban, Black families (2.4/100,000 children).

Berger (2005) analyzed a sample of 2,760 families taken from the 1985 National Family Violence Survey (NFVS). The purpose of the study was to understand ways in which existing microeconomic theories of partner abuse and distribution of resources within families may contribute to current understandings of child abuse. Results indicated that income may play a

substantially more important role in regard to parental violence in single-parent families than in two-parent families. Single-parent families below 200% of poverty have a much higher probability of violence.

Kavanagh, Dobash & Dobash (2007) reviewed 26 cases of fatal child abuse to examine the backgrounds of fathers who fatally abuse their children and the context in which these homicides occurred. They concluded that as a group these were undereducated, unemployed men with significant criminal histories. All except one victim had been subjected to a previous episode of violence by the offender and almost there-quarters of the perpetrators had perpetrated violence against an intimate partner, usually the child's birth mother.

Academic achievement. Budd, Heilman & Kane (2000) examined the psychological correlates of child abuse by 75 mothers aged 14-18 and their infants who were in foster care in the Cook County Illinois Department of Children and Family Services (DCFS) from 1991 to 1993. The purpose of the study was to examine psychological correlates of child maltreatment risk and to assess the validity of the Child Abuse Potential (CAP) Inventory with multiply disadvantaged teenage mothers. Initial study plans called for participants to be randomly selected; however, the selection process was changed when the researchers discovered that there was no comprehensive list of DCFS teens that were pregnant or had given birth. Alternatively, study participants were selected through referral by DCFS caseworkers and private providers. After referral, mothers who agreed to participate were interviewed. Approximately 10% of invited mothers declined participation.

Using descriptive and multiple regression statistical methods, the researchers concluded that mothers who were at greatest risk of abusing their children showed high levels of emotional distress, high social support dissatisfaction, and low reading achievement and years of education, but not on parenting beliefs or quality of child stimulation. The study's limitation was in its small sample size and lack of random selection of participants which limited generalizability.

Cadzow, Armstrong & Frazer (1999) examined the relationship between a range of potentially adverse psychosocial and demographic characteristics identified in the immediate postpartum period and child physical abuse at 7 months. One hundred fifty one participants who participated in a randomized controlled trial nurse-home visiting program were assessed using the Child Abuse Potential (CAP) inventory. The researchers concluded that, among other factors, education level less than 10 years was a risk factor associated with elevated risk of child maltreatment. They found, however, that there was no association between child abuse and sole parenthood, poverty, young maternal age, history of childhood abuse, or psychiatric history.

Sidebotham & Heron (2006) conducted a large cohort study of child maltreatment within a comprehensive ecological framework among children of the nineties. Known as the Avon Longitudinal Study of Parents and Children (ALSPAC), the study followed 14,256 children from birth through age six selected from a study area population of approximately one million beginning in April 1991. Using stepwise hierarchical regression analysis, the

researchers concluded that children of young parents with poor academic achievement were at greatest risk of maltreatment. The researchers concluded further that the impact of a childhood history of abuse is mediated through its effects on age at parenting, educational achievement, a psychiatric history, and the influences of poverty.

The finding that poverty is a strong risk factor was supported in a study by Connell, Bergeron, Katz, Saunders and Tebes (2007) in their study of the influence of child, family, and case characteristics on risk status for re-referral to child protective services in Rhode Island between 2001 and 2004.

Marital status. A number of studies have identified marital status as a major risk and protective factor in families that abuse their children (Cadzow, Armstrong and Frazer, 1999; Stiffman, Schnitzer, Adams, Kruse, and Ewigman, 2002; Schnitzer and Ewigman, 2005; Parks, Kim, Day, Garza, and Larkby, 2011). In particular, some studies have concluded single parenthood constitutes a significant abuse risk, while others have concluded that single parenthood status poses no increased risk of abuse. For example, in the studies conducted by Stiffman et al, and Schnitzer and Ewigman, children living in households with unrelated adults were nearly fifty times more likely to die of inflicted injury than children residing with two biological parents. The researchers concluded, however, that children living in households with a single parent and no other adults in residence had no increased risk of injury. Other studies have indicated a statistically significant relationship between single parenthood status and increased risk of abuse (Brown, Cohen, Johnson and Salzinger, 1998; Schloesser, Pierpont and Poertner, 1992; Buchholz,

Ester and Korn-Bursztyn, 1993; Sidebotham and Heron, 2006; Douglas and Finkelhor, 2006: Berger, 2005).

Brown et al (1998) conducted a 17-year longitudinal analysis of risk factors for child maltreatment among 644 families in upstate New York between 1975 and 1992. The purpose of the study was to identify demographic, family, parent, and child factors prospectively associated with risk for child abuse and neglect. Study participants were part of a large sample of families with children between the ages of 1 and 10 randomly sampled because they were representative geographically of the Northeastern region of the United States. Mothers were interviewed on four occasions; 1975, 1983, 1986 and between 1991 and 1993. Nearly one-quarter (24.5%) of the children lived with a single parent. Using multivariate statistical methods the researchers concluded that, among other risk factors such as low maternal education and low paternal involvement, single parent status was associated with risk of both physical abuse and neglect. Significantly, they also concluded that in order to identify children who are at greatest risk for child maltreatment a significant number of risk factors will need to be assessed because of their interactive affect. In other words, it is not productive to attempt to isolate a single factor that places a family at greatest risk of abusing their child.

The principal strength of the study by Brown et al is derived from the fact that it was a longitudinal study spanning 17 years, assessed numerous potential risk factors and used interview and records review data. The study's limitations are in the relatively small number of cases of abuse and

neglect, which limited statistical power and the relatively subjectivity of self-report data.

Alcohol and substance use. A number of studies have identified alcohol and drugs as risk factors affecting the abuse and neglect of children. In some, the focus is on whether the parent has a history of having experienced or grown up in a household in which there was alcohol or drug abuse at the time of an abuse report (English, Marshall, Brummel and Orme, 1999; Fuller and Wells, 2003; Wolock and Magura, 1996; Hamiliton and Browne, 1999; Sidebotham and Golding, 2000; Wolock, Sherman, Feldman and Metzger, 2001). Others have examined the association between parental alcohol abuse (mother only, father only, or both parents) and multiple forms of childhood abuse, neglect, and other household dysfunction known as Adverse Childhood Experiences (Dube, Anda, Felitti, Croft, Edwards and Giles, 2001).

In their study of the prevalence of alcohol and other drug involvement in maltreatment recurrence Fuller and Wells (2001) randomly selected 300 Cook County Illinois investigation cases. The period of study was from September through December 1999 and involved cases in which maltreatment was verified or confirmed. For a case to be identified as a "recurrence case" the period between the last previous report and a subsequent report could be no more than 60 days, regardless of the type of maltreatment allegation. Cases were further screened for the study to include only those with indications of alcohol or other drug involvement resulting in 95 cases in the study group. The researchers used strength of association and logistic regression statistics to determine risk factors most

associated with recurrence of child maltreatment. They concluded that single risk factors seldom act in isolation to each other, and that among adult caretakers in maltreatment cases, the most frequently noted problems were drug dependency (65%) and alcoholism (35%).

Similarly, Hamilton and Browne (1999) found that a family history of alcohol and/or substance abuse increased the likelihood of a child experiencing re-referral to Child Protective Services in England.

Dube et al (2001) conducted their study using 8629 adults drawn from the Kaiser Health Plan's Health Appraisal Center in San Diego, California. The researchers concluded that compared to persons who grew up with no parental alcohol abuse the ratio was approximately 2 to 13 times higher if either the mother or father, or both abused alcohol.

In its annual report to the legislature, the Florida Child Abuse Death Review Committee examined 94 child deaths that occurred in the state during calendar year 2004. The committee concluded that 42 deaths (45%) occurred in households where alcohol and/or substance abuse negatively affected the parent's ability to parent (Florida Child Abuse Death Review Committee, 2005).

Freisthler and Weiss (2008) conducted a longitudinal study in 58 California counties spanning four years to examine the relationship of referrals to child protective services for child abuse and neglect, and substance misuse. Three variables, alcohol or drug outlets (easy access to drugs), treatment needs and substance use availability were included as covariates in the research model. Two control variables were also included in

the analysis: percentage of households receiving Temporary Assistance for Needy Families (TANF) benefits and the percentage of unemployment within the county. The results revealed that the number of alcohol outlets and drug-related arrests per population were positively related to referrals for investigations of child maltreatment. However, alcohol and other drug admission rates for treatment were related to a decrease in CPS referrals, suggesting that alcohol and drug abuse alone are less significant in maltreatment rates than the availability of timely access to treatment services. For the control variables, the percentage of households that received welfare benefits was related to significantly more referrals, while the percentage of unemployment was related to lower rates of maltreatment.

Child Demographics

There is ample data on child abuse and neglect victim demographics in the research literature. Findings consistently point to the increased vulnerability of infants and toddlers, particularly children under one year old. Understanding child victim demographics is important on its face; however, taken within an ecological and risk and protective factor paradigm, child characteristics become even more important because of the potential contribution of child's physical or psychological profile to his or her increased risk of maltreatment.

Age. The strongest risk factor for being a victim of a child maltreatment fatality is age. In fact, children are more likely to die during their first year of life than at any other time (Jason, 1984; Chalmers, Fanslow, Marshall & Langley, 1993; Jason & Andereck, 1983).

Although several studies have found that children of all ages experience abuse, some of it fatal, young children comprise a larger proportion of those abused and those who die as a result of their abuse. Schnitzer and Ewigman (2005) identified 149 children whose deaths were caused by inflicted injury and compared them to children who died of unintentional injury. Using multiple regression statistical methods, the study revealed that fifty-eight percent of child victims were infants less than 1 year old. Seventy five percent were 2 years old and ninety percent were less than 2 years old at the time of death.

Race/ethnicity. There is some conflict in the literature about whether race is a factor in child maltreatment fatalities. However, while African-Americans represent 12.9% of the United States population, they are over-represented in fatal child abuse cases. In a study of fatal child abuse in Georgia Jason and Andereck (1983) found that the incidence of fatal child abuse rates for black children was 2.6 times that for white children. They found that in victims 4 years of age or younger 74% were white, 26% were black and none were Hispanic. In child victims five years of age or older 74% were white, 13% black and 13% Hispanic. Schnitzer and Ewigman (2005) found that 52% of child victims were white.

Schuck (2005) assessed a structural level explanation of racial disparity in child maltreatment using data from Florida counties (1998-2001) and the 2000 census. The research question was what effect poverty, concentrated poverty, and female-headed households had on Black versus White families. The study revealed that the average county-level

maltreatment reporting rate was significantly higher for Black children than for White children. County-level substantiated rates of child abuse and neglect were also significantly higher for Black children and for White children. However, the average county-level verification rate was lower for Black children compared with White children. These findings suggested that although Black children were more likely to come to the attention of the Florida child welfare system, cases involving Black families compared to those involving White families were less likely to be verified or to produce evidence necessary to substantiate abuse or neglect.

Higher child maltreatment reporting rates were associated with more Black female-headed households in poverty as compared with their White counterparts. These findings support the differential rates of poverty among Black female-headed households found in other studies and offer at least a partial explanation of the overrepresentation of Black children in the child welfare system. These findings do not, however, rule out other explanations such as racism and discrimination for the racial disparity found in this study.

Gender. Most studies have found that males are slightly more likely to be killed than girls. Douglas & Finkelhor (2006) used national data gathered from the National Child Abuse and Neglect Data system to determine that males are victims of fatal child abuse 52%-60% of the time and are killed at a rate of 18 per 100,000 children nationwide compared to the rate of 14 per 100,000 females nationwide. The study by Schnitzer and Ewigman (2005) showed a majority of child victims were male (56%).

Case Characteristics

Previous Abuse Reports. A number of studies reveal a strong correlation between prior abuse reports and child maltreatment deaths. This relationship often leads child protection workers to conclude that early intervention may have saved a life. Eugene, Sabotta and Davis (1992) compared abused and non-abused groups in a study of fatality after a report of child abuse in Washington State. The study purpose was to evaluate the risk of fatality in children surviving their first reported child abuse and neglect, compared to the general risk of fatality in a comparable non-abused population of children. A study group of 11,085 children born in Washington State were chosen from a total of 22,931 cases of abuse reported to the state child abuse registry from 1973 through 1986. A comparison group was matched on sex, county of birth, and year of birth. Both groups were then linked to the Washington state death files for the years 1973 through 1986 to identify deaths occurring in children less than 18 years of age. Total years of risk were calculated for each population and the difference in risk for each population was calculated using chi-square statistics. The researchers found that there were 61 deaths in 67,367 total years of risk subsequent to abuse among the children reported to the abuse registry and 63 deaths in 202,525 total years of risk in the comparison group. The data revealed that children who had been reported for physical abuse had the greatest risk for subsequent death (10.2 per 10,000 at risk for the study group versus 2.6 per 10,000 at risk for the comparison group) and neglect (7.7 per 10,000 at risk for the study group versus 2.6 per 10,000 at risk for the comparison group).

Comparing homicide and unintentional victims in Los Angeles, Sorenson and Peterson (1994) used a pair-wise matched case-control design (logistic regression) to assess known child maltreatment history as a risk factor for homicide versus unintentional injury death. The researchers reviewed Los Angeles Police Department homicide case summaries from 1978 through 1987. Demographic data and information about the deaths of children from birth to age 14 in 220 cases were abstracted. These cases were matched on age, sex, race/ethnicity, and date of death to a control group of children who died from unintentional injury taken from the California Master Mortality database from 1978 through 1987. The researchers found slightly less than one in three (29.4%) homicide victims had a history of prior reports and 42.7% came from families who had prior contact with child protection services compare to 37.6% in the unintentional injury category. However, study group children were more than three times more likely than unintentional victims to have received social and protective services prior to death.

In a study using longitudinal data that explored whether low-income children who survived a first incident of reported maltreatment were at higher risk of later childhood death compared to a matched comparison group of low-income children without reports of maltreatment Jonson-Reid, Chance and Drake (2007) found that children in the maltreatment group had about twice the risk of death before age 18. Among children with maltreatment reports, median time from the first report to subsequent death

was 9 months. Also of note is that the children in the study were almost entirely from single-parent households.

These studies offer compelling evidence that children who were the victims of prior reports of physical abuse did indeed have a greater likelihood of dying from subsequent abuse. Documented maltreatment may serve as a proxy for other factors, including socioeconomic status, substance use by the caretaker, and family disruption and discord (Sorenson and Peterson, 1994; Sabotta and Davis, 1992).

The Florida Child Death Review Committee process was created by the Florida legislature in 1999. It is composed of a specialist in medicine, anthropology, social work, child welfare professionals and citizen volunteers, among others. Committees are established in regions across the state that review child abuse and neglect deaths in their respective regions during the previous calendar year. The strength of the review process is that it provides a systematic methodology to review child abuse and neglect deaths and report findings to the legislature annually to inform policy and funding efforts. Its weakness lies in the retrospective nature of the review and the fact that it provides little information on prevention strategies. Another weakness is in the probable variability in practice from one jurisdiction to another across the state. For example, a confirmed case of child abuse fatality in one part of the state may be classified as a Sudden Infant Death Syndrome (SIDS) case in another part of the state or within the same jurisdiction. Additionally, until 2008, the committee only reviewed child abuse and neglect deaths in which there was a previous confirmed abuse or neglect

report. Thus, prior to 2008 the committee did not review child abuse and neglect deaths in which abuse or neglect were confirmed, but there was not a prior confirmed abuse report.

In its annual report (December 2003), the Committee indicated that in 2002 there were 79 child deaths resulting from abuse and/or neglect. Of that number, 29 (37%) of the deaths had at least one report of abuse or neglect, with a range of one to 15 prior reports.

Household composition. In this study household composition and its affect on fatal child abuse and non-fatal child abuse will be examined as both a risk and protective factor within an ecological framework. As such, it is quite possible that on the one hand the manner in which a household is composed protects a child from abuse, while on the other hand the composition of the household increases the risk of abuse, sometimes fatal.

In two separate studies Stiffman, Schnitzer, Adam, Kruse and Ewigman (2002) and Schnitzer and Ewigman (2005) examined household composition and its impact on the risk of fatal child maltreatment.

Stiffman et al (2002) reviewed all cases of children less than 5 years of age residing in Missouri who died between January 1, 1992 and December 31, 1994, and reviewed by the Missouri Child Fatality Review Panel. Natural case deaths related to prematurity or congenital anomalies were excluded because the majority died before hospital discharge and, therefore, were never members of a household in the same manner as study cases. Sudden infant death syndrome (SIDS) cases were included as natural-cause deaths. One hundred seventy-five cases were selected for the study group. Two

controls were selected for every study group case and matched to study group cases by age at the time of death. Households were classified into 5 mutually exclusive categories: 1) households with two biological parents of the deceased child and no other adults; 2) 1 biological parent and no other adults, 3); 1 or 2 biological parents and another adult relative (grandmother, aunt, etc.); 4) at least 1 step, foster, or adoptive parent, and; 5) 1 or 2 biological parents and another, unrelated adult resident (paramour, friend). Households in categories 3 through 5 were coded using the following hierarchy: Households with an unrelated adult were classified in the last category, regardless of other household members. Households with a step, foster, or adoptive parent and another relative were categorized in the step, foster, adoptive parent group and households with 2 biological parents and no other adult were the reference group for analysis. Data were analyzed using univariate and bivariate distributions of dependent and independent variables. Adjusted odds ratios were calculated with logistic regression to control for confounding factors.

In a follow-up study of household risk factors and perpetrator characteristics Schnitzer and Ewigman (2005) identified 149 cases of children less than 5 years of age who died in Missouri between January 1, 1992, and December 31, 1999. The researchers used the same methodology as Stiffman et al (2002), except that sudden infant death syndrome cases were excluded because of the potential for misclassification of inflicted-injury cases as SIDS. Adjusted odds ratios and 95% confidence intervals were calculated using logistic regression to control for confounding. Both studies concluded

that the majority of known perpetrators were male (71.2%), and most were the child's father (34.9%) or the boyfriend of the child's mother (24.2%). In addition, children residing in households with adults unrelated to them had the highest risk of maltreatment death compared with descendent children residing in households with 2 biological parents and no other adults. Children residing in households with step, foster, or adoptive parents also had an increased risk of maltreatment death as did children in households with other relatives present. The majority (83%) of households with at least 1 unrelated adult consisted of the child's biological mother and her boyfriend. Thus, the increased risk of maltreatment death occurred in households including biologically unrelated adult males and mothers' boyfriends. Risk was not increased in households with 1 biological parent and no other adult resident. By contrast, Seiglie (2004) concluded in a study of child outcomes in abusive families that an increase in the desired number of children reduces the quality of care to each child and therefore increases maltreatment. He further found that children living with single parents have an 80% greater risk of suffering serious injury or harm from abuse or neglect than those living with both parents.

In their study of child homicide in the United States Air Force Lucas, Wezner, Milner, McCanne, Harris Monroe-Posey and Nelson (2002) found similar results for biological fathers and mothers' boyfriends.

Studies in which risk factors are examined tend to start first with findings that suggest a father who is unemployed or unrelated to the child victim, does not take responsibility for his behavior, and maltreated a child in

the past along with whether the mother had a criminal history pose greatest risk of perpetrating re-abuse (Coohey, 2006). Budd, Heilman & Kane (2000) examined the psychological correlates of child abuse by 75 mothers aged 14 to 18 and their infants served by the Illinois Department of Children and Family Services. The researchers concluded that mothers who were at greatest risk of abusing their children showed high levels of emotional distress, high social support dissatisfaction, and low reading achievement and years of education, but not on parenting beliefs or quality of child stimulation. Cadzow, Armstrong & Frazer (1999) concluded that elevated depression scores, education level less than 10 years, concern regarding the provision of housing and domestic violence characterized by verbal and social abuse were risk factors associated with elevated risk of child maltreatment. They found, however, that there was no association between child abuse and sole parenthood, poverty, young maternal age, history of childhood abuse, or psychiatric history. Findings that a history of psychiatric problems was not contributory to increased risk of perpetrating child abuse were confirmed in a study by Coohey (2006).

In a study of child maltreatment among Asian Americans Zhai (2009) found that contrary to findings among non-Asian Americans where mothers are the perpetrators in the greater percentage of child maltreatment cases (38.8% vs. 18.3% for fathers), in Asian families a male relative, most often the father, is perpetrator of child maltreatment (60%). In addition, while younger children in non-Asian American families are the victims most often, older children in Asian American families is most often the target group. The

researcher speculates that this dissimilarity may be due to difference in parents' expectations of children in the two groups. Traditionally, Asian Americans parents' care of infants and toddlers is characterized by affection, tenderness, indulgence and highly protective attitudes. These practices rapidly change, however, as children age and are most associated with educational expectations beginning at about age 4 or 5.

Chapter III: Methodology

Purpose of the Study

The purpose of this study was to identify perpetrator characteristics most associated with fatal and non-fatal child abuse after controlling for child characteristics.

Child abuse has been a major social problem for many years with child deaths resulting from abuse totaling between 1500 and 2000 annually nationwide. Without further study with an eye on early identification of perpetrator characteristics that place some children at increased risk of fatal abuse outcomes, it will be difficult to develop preventative measures for early intervention by child protection professionals.

Research Design

For this study, a non-experimental research design was used, as the study focused on exploring the naturally occurring variations in the dependent and independent variables, without any intervention by the researcher (Schutt, 2001). Non-experimental designs are useful if they meet three conditions for cause and effect. First, the two variables must be related; second, the proper time order must be established; and third, an observed relationship must not be due to a confounding extraneous variable (Johnson, 2000). This study was conducted as a secondary analysis of existing records. Descriptive statistics were used because they describe the

distribution of and relationship among variables (Schutt, 2001). Specifically, age, race, and gender of both the child victims and the perpetrators of abuse were described using descriptive statistics. This was followed by applying a multivariate statistical analysis (logistic regression) to build a model that accounted for the greatest variance between perpetrator characteristics in fatal child abuse cases and perpetrator characteristics in non-fatal child abuse cases. A logistic regression was used to analyze the relationship of the independent variables to the dichotomous dependent variables of death and non-death. This model was used because it seeks to identify a combination of independent variables—which are limited in few, if any ways—that best predict membership in a particular group, as measured by the categorical dependent variable (Mertler & Vannatta, 2005). In addition, logistic regression requires no assumptions about the distribution of the predictor variables (IVs) that need to be made by the researcher. It takes into account missing data, and accounts for analysis of variance. The analysis was appropriate because the dependent variable was dichotomous and it allowed for the study of risk factors most associated with perpetrator characteristics, and how they affect the death of the child victim. Cox and Snell and Nagelkerke R^2 Goodness-of-Fit measures were used as estimates of R^2 to test for interaction effects (Mertler & Vannatta, 2005). To examine the interaction of the various perpetrator characteristics (independent variables) and their effect on the dichotomous dependent variable (fatal child and non-fatal child abuse) a logistical regression analysis was conducted. This method of analysis was appropriate when a study or portion of a study is

exploratory in nature and there is a large set of predictor variables. In this study there were sixteen (16) predictor variables. Logistical regression allows the researcher to determine which specific independent variables make the greatest meaningful contribution to the overall prediction (Mertler & Vannatta, 2005).

This study is critical because from calendar year 2000, the first that statewide data was available, through calendar year 2009, approximately 1190 children died of abuse and neglect in Florida (Florida Child Death Review Committee, 2010). Of that total, approximately thirty percent resulted from abuse, a directed act intended to cause serious physical harm or death. Green (1998) concluded that five or more independent variables allows a study group of 102 to be sufficient to achieve medium effect size. Medium effect size is sufficient for generalizing to a larger population.

Target Population

In 1999, the Florida Legislature established the State Child Abuse Death Review Committee within the Florida Department of Health (DOH) and authorized the creation of local child abuse death review committees. The committees were charged with reviewing "the facts and circumstances of all deaths of children from birth through age 18 which occur in this state as the result of verified child abuse or neglect" (Florida Attorney General Advisory Legal Opinion, 2005). The committee chose to review only those child maltreatment death cases in which there had been at least one previously confirmed maltreatment allegation. Non-fatal child abuse cases were cross-

referenced with child abuse study cases included in the committee's annual reports.

Fatal child abuse case records that were evaluated for Death Review Committee reports are housed in the Florida Department of Health. Subsequently, a comparison group of non-fatal child abuse cases was selected from the Florida Department of Children and Families (DCF) database and compared to fatal child abuse cases on child characteristics. Data from both fatal child abuse case records and non-fatal child abuse case records were collected, de-identified, coded, entered into an excel spreadsheet and transported into SPSS for analysis.

The target population was individuals who engaged in abusive acts that resulted in fatal or non-fatal outcomes to child victims in Florida during the years 2003 through 2008. Pertinent perpetrator demographics were collected and analyzed in an effort to identify risk factors most associated with fatal outcomes and how those factors differed from those of perpetrators in cases where children were abused, but did not die.

Variables

Dependent Variable. The dependent variable in this study was fatal and non-fatal child abuse cases coded dichotomously.

Independent Variables. The independent variables were the perpetrators' age, race, and gender, perpetrator history of domestic violence, perpetrator number of domestic violence arrests, perpetrator number of violent arrests, perpetrator total number of arrests, perpetrator total number of DCF reports, perpetrator history of alcoholism, perpetrator number of

alcohol arrests, perpetrator total number of DUI arrests, perpetrator history of substance abuse, perpetrator number of substance abuse/use or sale arrests, perpetrator general history of violence, perpetrator prior abuse report history, and perpetrator relationship to child victim.

Selection of Participants

Since the intent of this study was to identify individuals at greatest risk of abusing their children to death, all cases of fatal child abuse (n = 501) from 2003 to 2008 were examined, thus sampling was not necessary for the study group.

Data for this study were gathered from two sources. Death case data was obtained from the DOH database, which holds all cases reviewed by the Florida Death Review committee. Non-death (comparison group) data were obtained from the DCF Child Welfare dataset (i.e., HomeSafenet and FSFN). Although the Florida Death Review Committee originally obtained death case data from DCF, the dataset was obtained from DOH because the researcher believed that the dataset would be more complete than obtaining it directly from the DCF dataset at FMHI. This belief was validated when the DOH dataset was compared to the DCF dataset.

The data for this study covered the years from 2003 through 2008. Incidences of Child maltreatment is reported through the Florida Abuse Hotline and is maintained in a statewide data system as required by state statute. Historically, the data have been fairly complete. However, the dataset obtained for this study from DCF had a considerable amount of missing data that was supplemented by independent and intensive record

review. The dataset obtained from DOH, while having some missing data, required less intensive data mining. It appears that the DCF missing data were the product of poor data collection techniques in which the input of some data elements into the state data collection system was simply ignored by staff over time. Whatever the reason for so much missing data, it made ready access impossible. Since the data used by DOH was provided by DCF, it was apparent that complete data were available through intensive individual records review, but had to be mined by DCF prior to delivery to DOH.

Unfortunately, from it first reviews in 2000 until the Florida legislature changed the review procedures to become effective in 2008, the Florida Death Review Committee did not review every case of child abuse deaths in Florida. It only reviewed those maltreatment death cases (i.e., neglect and abuse) that had at least one prior confirmed abuse report.

The comparison group (n = 648), comprised of cases in which non-fatal child abuse was the outcome, was selected by matching the two groups on child characteristics (age, race, gender) using propensity score technique. Propensity score matching refers to the pairing of treatment and control units with similar values (Rubin, 2001). Estimated propensity scores were calculated using a logistic regression model to predict membership in either the death or non-death category using child characteristics (i.e., age, race, gender) and obtaining a predicted probability of being in the fatality group (i.e., the propensity score). This is known as regression adjustment and refers to a statistical procedure that adjusts estimates of the treatment

effects by estimating the relationship between the dependent variable and matching variables in the treatment group (Rubin, 1979). The mean propensity score for the non-fatality group was .43 (SD = .0086) and for the fatality group was .43 (SD = .0084), with scores ranging from .41 to .45 for the non-fatality and from .43 to .45 for the fatality group. Cases in the non-fatal abuse comparison group were selected at various levels of propensity to correspond to the propensities of the fatal abuse cases. Those non-fatal cases that could not be matched on propensity score were eliminated; thus ensuring the two samples were statistically equivalent.

To verify the two groups were equivalent, an independent t-test was performed on the propensity scores of the matched fatal and non-fatal abuse cases. The results were non-significant $t(1145)=.568$, $p = .57$ indicating the predicted likelihood of lethality of the abuse was similar in both groups.

In addition, the fatal and non-fatal cases were examined for balance on each individual child characteristic used in the calculation of the propensity score. The similarity of children's ages across the two case types (i.e., fatal and non-fatal) was assessed by conducting an independent *t*-test with age as the dependent variable and the case type as the grouping variable. As would be expected, no significant difference was present in the average children's age of fatal and non-fatal abuse cases $t(1147)=.545$, $p = .586$. The equality of the distribution of children's race across the two groups was examined by conducting a chi-square test of association. These results showed no significant difference $\chi^2 (3, N = 1147) = 6.545$, $p = .088$ in racial composition of the fatal and non-fatal cases. Finally, the similarity of

children's gender within the fatal and non-fatal cases was assessed by performing a chi-square analysis. Again the results were non-significant χ^2 (3, N = 1146) = 1.606, p = .658.

Given the matching process that has controlled for child characteristics associated with fatal and non-fatal abuse cases, this study focuses on the effects of perpetrator characteristics on fatal and non-fatal abuse outcomes.

As a result of the seemingly high frequency of paramours' involvement in fatal child abuse cases, as reported in the media, the role of mother's boyfriends (paramours) in fatal child abuse was one of the foci of this study.

Each variable was examined first using descriptive statistics to examine individually its strength of association with the dependent variable. The continuous variable of child age was recoded to 0-1, 2-3, 4-5, 6-10, 11-17 and 18 and older for study and comparison groups to comport with data from the literature that shows the younger a child the more likely he or she is to be a victim of fatal child abuse (Wu et al, 2004; Daly and Wilson, 1994; Kotch et al, 1993). Age of the perpetrator was recoded to 18-25, 26-31, 32-38, 39-48, 49-65, and 66 and older. These grouping are consistent with data from other studies (Kunz and Bahr; 1996; Herman-Giddens et al; 2000; Jason and Andereck, 1983; Herman-Giddens et al, 2003; Sinal et al, 2000) that show the younger the perpetrator the more likely he or she will cause a child's deaths through abuse. For propensity score matching child's age, race and gender were used as covariates in a logistic regression analysis to ensure that the cases in both the study and comparison groups were similar. Within group and between group relationships were conducted on the

perpetrator variables using χ^2 at the p =.95 confidence level. A .95 confidence level indicates that there is less than one in twenty chances that the results achieved could have occurred by chance.

Procedures

The research procedures used in this study involved a retrospective review of data in both fatal and non-fatal child abuse cases. Permission to examine non-fatal abuse case data was obtained from the Secretary of the Florida Department of Children and Families. To review fatal child abuse case data, Institutional Review Board approval was obtained from The Florida Department of Health. Institutional Review Board approval was also obtained from the University of South Florida. The Department of Children and Families also required a Privacy and Security Agreement.

Additional steps to ensure the confidentiality of families were as follows:

1. All information obtained for this study was de-identified.
2. Data was coded with dummy identifiers to ensure confidential information was not revealed.
3. All data collected was password-protected in an electronic data file and data for this study will be destroyed not more than 3 years after the conclusion of this study.

Analysis

The following steps describe the process used in analyzing data for this study. First, frequencies were used to evaluate the values of the fatal and non-fatal dependent variables, child characteristics, and sixteen independent

variables. This was followed by cross-tabulations to analyze the relationship of each independent variable with the dependent variable. Chi-square statistics were computed to test the strength of these relationships. These analyses were conducted at the p=.95 confidence level. This set of analyses was followed by a logistical regression analysis in which only those independent variables (11) that were significant at the individual level were entered and analyzed in relation to the dichotomous dependent variables to build a model of the perpetrator variables that most affect child abuse death outcomes.

Four variables emerged as predictors of fatal and non-fatal child abuse. One (perpetrator relationship to the child victim) was positively associated with fatal outcomes and three others (perpetrator prior abuse report history, perpetrator total number of arrests, and perpetrator history of violence) were associated with non-fatal outcomes. For all four variables chi-square, p-value, and adjusted odds ratio statistics were calculated, analyzed, and reported.

To answer hypotheses 1 through 5, cross-tabulations were conducted, along with chi-square statistics to test the strength and significance of the relationship between the independent variables in each hypothesis and the dependent variables. Through this method of analysis, strong and significant relationships were established between the perpetrator's relationship to the child victim and death as hypothesized in hypothesis number 1 and the perpetrator's history of substance abuse (use and/or sale) and child death as hypothesized in hypothesis number 4.

Hypothesis 5, which addresses the relationship between child abuse and the total number of perpetrator arrests was added after it was retained in the regression model. The findings confirmed that there was a strong and significant relationship between non-fatal child abuse and the perpetrators' arrests.

Strengths/Limitations

The strengths of this study are in its ability to inform child protection practice and provide additional critical information about risk factors most associated with perpetrator characteristics in cases in which children die of abuse. In addition, this study examined a combination of factors not found in other studies; namely perpetrator prior history of abuse reports, alcohol-intoxication arrests, and history of violence in an effort to determine those factors that contribute to placing children at risk of death due to abuse. Though not anticipated when hypotheses for this study were being developed, the perpetrator's number of arrests emerged as a significant contributing variable to child abuse most often not resulting death. Therefore, hypothesis 5 was added.

A limitation of this study is its data collection method. This study used retrospective data, meaning methods of data collection over a span of six years were not consistently employed. Further, data elements were lost over time, either as a product of poor record-keeping or possibly executive decisions about which data elements to collect. As a result, a data element tracking ethnicity was lost and is not reported FSFN. In addition, perpetrator economic and academic achievement, and marital status are data elements

that were never collected. Therefore, these perpetrator variables could not be analyzed for this study.

Many elements that were tracked had missing data, requiring a record-by-record search to obtain the data. In addition, the Florida Child Death Review Committee, a source document for this study, reviewed only child abuse death cases that had a previous abuse allegation during the six years comprising the study period. Although there are significant new findings to contribute to the literature in this area of study, having a dataset that eliminated cases purely on the fact there were no prior abuse reports presents a challenge for the researcher when interpreting the data because there were more fatal child abuse cases during the study period than were included in the study.

Chapter IV: Results

This study's purpose was to examine the characteristics of perpetrators in child abuse death and non-death cases in Florida controlling for child characteristics.

Data Selection

Data for this study were taken from two sources. Study group data were obtained from child abuse fatality cases (*n* = 501) studied by the Florida Death Review Committee from 2003 through 2008. Comparison group data were obtained from child abuse non-fatality cases (*n* = 648) in the Florida Safe Families Network (FSFN) from 2003 through 2008 and matched with study group data using propensity scores. Assigning propensity scores insures greater ability to randomly match cases on key variables. In this study those variables were child age, race and gender.

Child Age

Child age in fatal and non-fatal cases ranged from 0 to 17 years of age (m = 2.9; SD = 3.9 and 2.8; SD = 3.8 respectively). Child age was used as one of three predictor variables in calculating the propensity score matching of fatal and non-fatal abuse cases. Therefore, the expectation is that there will be little significant difference in the ages of children in either group. However, it is significant to provide a breakdown of abuse by the age of the children in this study regardless of grouping because previous study findings

indicate that irrespective of whether the abuse results in fatality or not, younger children are more likely to be abused. In both fatal and non-fatal cases 72% of children were in the 0-3 age group, 13% were in the 4-5 age group, 7% were in the 6-10 age group, and 9% were in the 11-17 age group.

Child Race

Ethnicity was not a data element consistently tracked in the FSFN database. However, child race, which was also used as a predictor variable in calculating the propensity score matching of fatal and non-fatal abuse cases, was collected. In 1149 fatal and non-fatal cases, 741 (65%) involved White children and 408 (35%) involved non-White children.

Child Gender

Child gender was the third predictor variable used in calculating the propensity score matching of fatal and non-fatal abuse cases. Therefore, in 1149 fatal and non-fatal cases, 436 (38%) were female and 713 (62%) were male. These finding comport with those of Douglas & Finkelhor (2006) and Schnitzer and Ewigman (2005).

Child demographics are presented in Table 4.1. These data are presented graphically in Figure 2. As can be seen in Figure 2, child characteristics are similar in fatal and non-fatal cases because these characteristics were used to match the comparison group to the study group. That fact not withstanding, children ages 0-3 are the most likely to be abused in both fatal and non-fatal cases.

Table 4.1: Child Demographics

Variable	Total	Death % (N)	Mean (SD) (years)		Non-death % (N)	Mean (SD) (years)	
	1149	501			648		
Child Age							
0-1	438	40%(197)	2.8	3.8	37%(241)	2.9	3.9
2-3	385	33%(165)			34%(220)		
4-5	141	12%(59)			13%(82)		
6-10	80	7%(34)			7%(46)		
11-17	97	8%(42)			9%(55)		
17+	5	.4%(2)			.5%(3)		
Child Race							
White	741	65%(320)			66%(421)		
Non-White	400	36%(179)			34%(221)		
Child Gender							
Male	712	62%(308)			62%(404)		
Female	436	38%(192)			38%(244)		

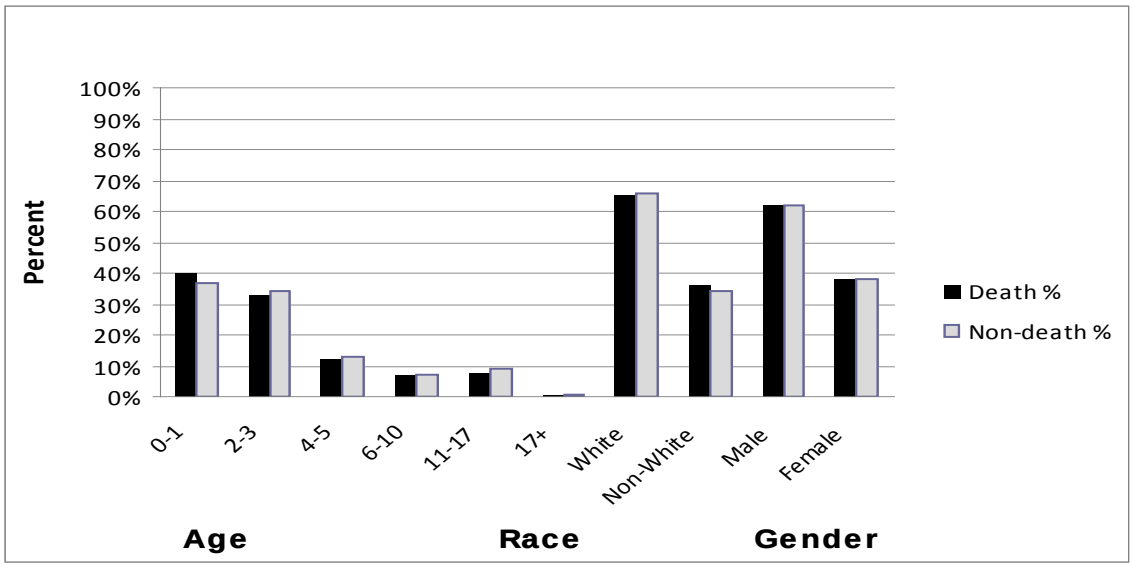

Figure 2: Child Demographics

Perpetrator demographics are presented in Table 4.2. These data are presented graphically in Figure 3. As can be seen in Figure 3, perpetrator characteristics are similar in death and non-death cases, including the majority of perpetrators in the 18-31 age groups.

Table 4.2: Perpetrator Demographics

Variable	Total	Fatal % (N)	Mean (SD) (years)	Non-fatal % (N)	Mean (SD) (years)
	1149	501		648	
Perpetrator Age					
18-25	351	30%(149)	31.3 10.9	31%(202)	29.9 8.6
26-31	327	27%(132)		30%(195)	
32-38	227	20%(99)		20%(128)	
39-48	155	14%(69)		13%(86)	
49-65	51	6%(32)		3%(19)	
66+	8	1%(7)		.2%(1)	
Perpetrator Race					
White	762	68%(332)		67%(430)	
Non-White	371	32%(160)		33%(211)	
Perpetrator Gender					
Female	676	58%(288)		60%(388)	
Male	472	42%(212)		40%(260)	

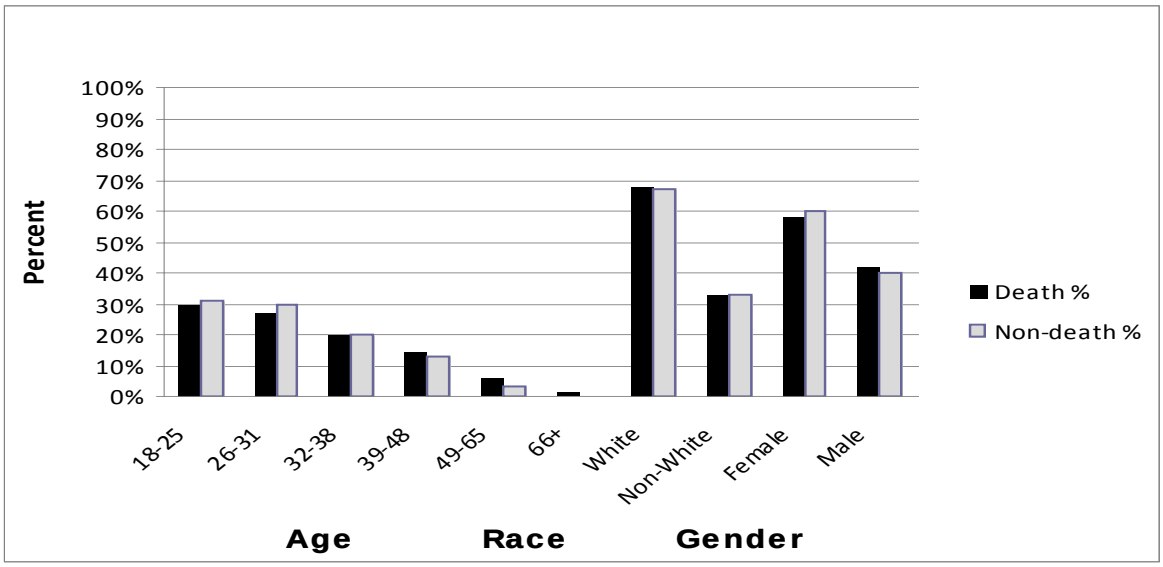

Figure 3: Perpetrator Demographics

Table 4.3 provides a chi-square test of association between each perpetrator (IV) variable in this study and the dichotomous (DV) variable of fatal and non-fatal child outcomes. As can been seen from this table a number of variables such as perpetrator age, history of domestic violence, and history of substance abuse, etc., are highly associated with the dependent variable, but were not retained in the regression analysis. Percentages of perpetrators represented in each variable.

Table 4.3: Bivariate Analyses of Perpetrator Characteristics

	Fatal (N = 501)			Non-Fatal (N = 648)	
Perpetrator Characteristics	%	*df*	χ^2 Value	%	*p* =
Age	56%	6	15.542	44%	.016
Race	67%	3	1.323	33%	.724
Gender	59%	1	.604	41%	.437
Relationship to Victim		3	38.600		.001
• Mother	45%			55%	
• Father	32%			36%	
• Paramour	8 %			3%	
Hist. of Domestic Violence	11%	1	20.697	21%	.001
Number of DV Arrests		2	2.926		.232
• 0-1 arrest	93%			91%	
• 2-3 arrests	2%			4%	
• 4 or more arrests	4%			6%	
Hist. of Alcoholism	6%	1	1.330	8%	.249
Hist. of Substance Abuse	24%	1	25.100	38%	.001
Number of DUI Arrests		2	3.976		.137
• 0-1	94%			93%	
• 2-3	1%			3%	
• 4 or more	5%			5%	
Hist. of Violence	21%	1	38.353	38%	.001
Number of DCF Reports		4	25.832		.001
• 0-1	66%			58%	
• 2-3	21%			21%	
• 4 or more	13%			21%	
Number of Drug Arrests		2	6.566		.038
• 0-1	90%			85%	
• 2-3	5%			8%	
• 4 or more	5%			7%	
Number of Alcohol Intoxication					

Arrests		2	2.566		.005
• 0-1	95%			95%	
• 2-3	.2%			.9%	
• 4 or more	5%			4%	
Total Number of Arrests		2	29.775		.001
• 0-1	66%			51%	
• 2-3	15%			17%	
• 4 or more	19%			32%	
Total Number of Violence Arrests		2	6.906		.032
• 0-1	85%			80%	
• 2-3	9%			11%	
• 4 or more	6%			10%	
Perp. prior abuse report hist.	40%	1	34.972	58%	.001

To build a model of perpetrator characteristics associated with child abuse fatalities, only those variables (perpetrator age, relationship to the abuse victim, history of domestic violence, history of substance abuse, history of violence in general, number of DCF reports, prior abuse report history, number of alcohol arrests, number of drug arrests, number of alcohol intoxication arrests, total number of arrests, and total number of violence arrests) that were significant at the individual level were entered into the logistic regression. See the results of that regression model in Table 4.4.

Table 4.4: Regression Coefficients

Variables	*B*	*Wald Chi-square*	*df*	*p*	*Odds ratio*	*95% CI*	
						Lower	*Upper*
Perp. prior abuse report history	-.348	6.412	1	.011	.706	.539	.924
Perp history of Violence	-.521	5.953	1	.015	.594	.391	.903
Perp relationship to victim	.297	16.160	1	.001	1.346	1.17	1.56
Number of arrests	-.269	6.243	1	.012	.764	.619	.944

Hypothesis 1: It is predicted that there will be a statistically significant difference between perpetrators of fatal and non-fatal child abuse with perpetrators of fatal child abuse more likely to be paramours.

A cross-tabulation of case type (fatal/non-fatal) and perpetrator relationship to child victim was conducted to determine the strength and significance of the relationship of the two variables. Mothers were the perpetrators in fatal cases 44% of the time and 61% of the time in non-fatal cases; fathers were represented in 31% of fatal cases and 30% in non-fatal cases; and paramours were the perpetrator in 8% of fatal cases and 4% in non-fatal cases. All other perpetrators (babysitter, uncle, grandfather, child care worker, foster parent, etc) accounted for 14% of fatal cases and 6% of non-fatal cases. There is a strong and significant relationship between the perpetrator's relationship to the child victim in all abuse cases with the victim's mother the perpetrator in the greater percent of cases χ^2 (3, N = 379) = 13.841, p = .003. This means that mothers are the perpetrators in a

higher percentage of abuse cases (55% vs. 36% in non-fatal cases; 44% vs. 32% in fatal abuse cases) than fathers and they far exceed paramours (4% in non-fatal cases vs. 8% in fatal cases).

Hypothesis 2: It is predicted that perpetrators in death cases will be significantly younger than their counterparts in cases where there is non-fatal child abuse.

When examining the perpetrator's relationship to the child victim in non-fatal cases, mothers in the age range of 18 to 25 accounted for 36% of the abuse and 64% when the age range was expanded to age 31. In fatal cases, mothers 18 to 25 accounted for 34% of cases and 64% when the range was expanded to age 31.

Fathers in the 18 to 25 age range accounted for abuse in only 27% of fatal abuse cases, but their involvement increased to 53% when the age range was expanded to age 31. In non-fatal cases fathers were involved in 58% of cases across the 18 to 31 year old age range.

Paramours account for 4% of cases in the non-fatal cases across the 18 to 25 year age range and 7% when the range was expanded to age 31. In fatal abuse cases paramours accounted for 12% of cases in the 18 to 25 age range and fully 19% when the age range was expanded to age 31, although they only represented 14% of perpetrators overall.

This analysis establishes that perpetrators between the ages of 18 to 31 are disproportionately involved in child abuse in comparison to older caretakers and that the hypothesis that perpetrators in fatal abuse cases are younger than their counterparts in non-fatal abuse cases is not confirmed by

the findings of this study (non-fatal m = 29.9; SD = 8.6 and fatal abuse cases m = 31.3; SD = 10.8).

Hypothesis 3: It is predicted that where there is a case of fatal child abuse, White, non-Hispanic males will represent the largest number of abusers, but Black and Hispanic males will be over-represented in comparison to their respective counterparts in cases of non-fatal child abuse.

The Florida statewide child maltreatment data system, The Florida Safe Families Network (FSFN) consistently records race, but does not consistently record ethnicity. Hispanic is coded under white and non-white. Therefore, the supposition posed in hypothesis 3 will not address the ethnicity question related to Hispanic males. However, since it is most likely Hispanic males were coded as non-White they were combined with Black male percentages in this study to determine over-representation.

A cross-tabulation of case type (non-death/death) with race of perpetrator revealed that in non-death cases the perpetrator was White in 67% of cases and non-White perpetrators accounted for 33%, meaning that in non-death cases non-White perpetrators were under-represented compared to their percent in other studies (43%). Additionally, in death cases White males accounted for 68% of perpetrators, while non-White males accounted for 32% of cases. These findings do not support hypothesis 3 because non-White males in fatal abuse cases are not over-represented compared to their counterparts in non-fatal cases. By contrast, it is White males who are over-represented (32% vs. 68%) in fatal cases and (33% vs. 67%) in non-fatal cases. Although the difference between Whites and non-

Whites in non-fatal and fatal cases is evident, the differences are not statistically significant χ^2 (1, N = 1133) = .020, p = .888.

Hypothesis 4: It is predicted that in cases of fatal child abuse, the perpetrators are more likely to have used or abused illegal substances than their counterparts in cases of non-fatal child abuse.

A cross-tabulation of perpetrator history of substance abuse (use and/or sale) with the dependent variable indicated that it was a factor contributing to the death of a child in only 24% of cases, and was a factor 38% of the time in non-fatal cases. There is a strong and significant relationship between substance abuse and child abuse χ^2 (1, N = 1125) = 25.100, p > .001. However, as illustrated in Table 4.4 the perpetrator's history of substance abuse was not retained in the logistic regression model. Therefore, this hypothesis is not confirmed.

Hypothesis 5: It is predicted that there will be a relationship between fatal child abuse and the perpetrator's total number of arrests.

This variable was retained in the logistic regression model and revealed that the perpetrator's total number of arrests is a moderately strong and significant predictor variable in child death cases χ^2 (1, N = 1149) = 10.625, p = .001. Using total arrests as a predictor, the findings indicate that in only about 24% of cases this variable contributes to abuse resulting in fatality to the child victim (p = .012, aOR = .764; 95% confidence interval [CI)]: .62-.94).

Dissertation question: What risk and protective factors associated with perpetrator characteristics contribute most to increased risk of fatal child abuse as opposed to those that result in non-fatal child abuse?

A cross-tabulation was conducted to determine which independent variables (perpetrator age, race and gender, perpetrator history of domestic violence, perpetrator domestic violence arrests, perpetrator number of violent arrests, perpetrator prior abuse report history, perpetrator total number of DUI arrests, perpetrator total number of arrests, perpetrator total number of DCF reports, perpetrator history of alcoholism, perpetrator specific alcohol arrests, perpetrator specific substance abuse/use or sale arrests, perpetrator general history of violence, perpetrator relationship to child victim, and perpetrator history as a domestic violence aggressor) predicted membership in the abuse fatality category. Variables and their values are listed in Table 4.3.

A test of the full model with all four predictors against a constant-only model was statistically significant χ^2 (4, N = 1149) = 14.259, p < 001, indicating the four predictors reliably distinguish which variables contribute most to fatal and non-fatal outcomes. The model correctly classified 62.5% of cases. Cox and Snell r^2 and Nagelkerke r^2 accounted for 9 and 12% of the variability in the dependent variable.

Regression results indicate the overall model of four predictors (a general history of violence, the perpetrator's relationship to the child victim, the perpetrator's prior abuse report history, and the total number of arrests)

was statistically reliable in distinguishing between fatal and non-fatal abuse cases χ^2 (1, N = 1149) = 15.429, p < 001.

Table 4.4 shows regression coefficients, Wald statistics, adjusted odds ratios, and 95% confidence intervals for each of the four predictors. Wald statistics indicate that the perpetrator's relationship to the child victim χ^2 (1, N = 1149) = 16.160, p = .001 is a significant and strong predictor of the likelihood of abuse resulting in death. On the other hand, the perpetrator's prior abuse report history χ^2 (1, N = 1149) = 6.412, p = .011, and history of violence χ^2 (1, N = 1149) = 5.593, p = .015 are significant, but weak predictors of the likelihood of abuse not resulting in the death of the child victim. The perpetrator's total number of arrests χ^2 (1, N = 1149) = 10.625, p = .001 is a moderately strong predictor of the likelihood of abuse not resulting in death.

Adjusted odds ratio for perpetrator history of violence indicates that a perpetrator with a history of violence reduces the risk of fatal abuse by 41% (p = .015, aOR = .594; 95% confidence interval [CI]: .39-.90).

Relationship of the perpetrator (mother, father, paramour) to the child victim is a strongly significant predictor of abuse ending in death χ^2 (1, N = 1148) = 16.160, p = .001, and that there is a one and one third risk that the outcome of the abuse will result in death (aOR = 1.34; 95% confidence interval [CI]: 1.2-1.6).

The adjusted odds ratio for a history of prior abuse reports indicates that there is only a 29% risk that the perpetrator will engage in abuse that

results in fatality to the child victim (p = .011, aOR = .706; 95% confidence interval [CI)]: .54-.92).

The adjusted odds ratio for the perpetrator's total number of arrests indicate that in about 24% of cases this variable contributes to abuse resulting in fatality to the child victim (p = .012, aOR = .764; 95% confidence interval [CI)]: .62-.94).

Chapter V: Discussion

Interpretation, Limitations and Conclusions

This study put forth a number of independent variables most likely to contribute to perpetrator profiles in child abuse fatal and non-fatal cases within ecological and risk and protective factor theoretical models. A method was proposed to address a research question and a set of hypotheses that examined the relationships among perpetrator characteristics and fatal and non-fatal child abuse outcomes. A retrospective analysis of data from child abuse fatality cases reviewed by the Florida Child Death Review Committee within the Florida Department of Health (n = 648) and non-fatal child abuse cases (n = 501) taken from the Florida Department of Children and Families child abuse database were used to test the overall research question. Chapter Four provides the results of this analysis. Chapter Five provides an interpretation of the study findings, limitations of the study, and implications and recommendations related to social work practice and social work research.

Interpretation of Findings

In this study the results of the research hypotheses and the research questions in Chapter Four form the framework for the discussion of the results in this section.

It is predicted that there will be a statistically significant difference between perpetrators of fatal and non-fatal child abuse cases with perpetrators of fatal child abuse more likely to be paramours.

Mothers in this study were the most likely perpetrators in a larger percentage of fatal abuse cases (44%) than fathers (31%) and paramours (12%). Paramours represented only 4% of perpetrators in non-death cases. This finding is contrary to findings in studies by Jason and Andereck (1983), Sinal, Petree, Herman-Giddens, Rogers, Enand and DuRant (2000), Schloesser, Pierpont, and Poertner, J. etal, (1992), Margolin (1992), Lucas et al (2002) and Starling, Sirontnak, Heisler and Barnes-Eley (2007), All others (aunt, uncle, babysitter, grandfather, etc.) represent 14% of perpetrators in death cases and 6% in non-death cases.

In the above referenced studies fathers engaged in fatal child abuse behavior more often than any other group. The findings in this study may very well be obscured by the fact that the cases selected from the Florida Child Abuse Death Review Committee were selected based on whether there was a prior report of abuse.

The findings in this study related to the prevalence of paramours in child abuse deaths are consistent with other studies that indicate paramours are not represented in a large percentage of child abuse deaths as compared to mothers and fathers. However, this study reveals a new finding not elsewhere found in the literature, that when paramours do abuse children they almost always abuse them to death, thus making them especially lethal in the caretaker role. This phenomenon may be related to similar behavior

observed in other animal species where an off-spring of the female in a union with a non-biological male is particularly vulnerable to injury or death perpetrated by the unrelated male (Robbins, Sicotte and Stewart, 2001). In addition, the non-biologically related male may view himself as having to compete with the off-spring for the biological mother's attention and affection.

It is predicted that perpetrators in death cases will be significantly younger than their counterparts in cases where there is non-fatal child abuse.

Perpetrators in fatal and non-fatal child abuse cases tend to fall disproportionately in the younger age group of 18-31 years of age. This finding is consistent with those found by other researchers (Herman-Giddens, et al, 2000; Schloesser, Pierpont and Poertner, 1992).

When examining the perpetrator's relationship to the child victim in non-fatal cases, mothers in the age range of 18 to 25 accounted for 36% of the abuse and 64% when the age range was expanded to age 31. In fatal cases, mothers 18 to 25 accounted for 34% of cases and 64% when the range was expanded to age 31.

Fathers in the 18 to 25 age range accounted for abuse in only 27% of fatal abuse cases, but their involvement increased to 53% when the age range was expanded to age 31. In non-fatal cases fathers were involved in 58% of cases across the 18 to 31 year old age range.

Paramours account for 4% of cases in the non-fatal cases across the 18 to 25 year age range and 7% when the range was expanded to age 31. In fatal abuse cases paramours accounted for 12% of cases in the 18 to 25

age range and fully 19% when the age range was expanded to age 31, although they only represented 14% of perpetrators overall.

This analysis establishes that perpetrators between the ages of 18 to 31 are disproportionately involved in child abuse in comparison to older caretakers and that the hypothesis that perpetrators in fatal abuse cases are younger than their counterparts in non-fatal abuse cases is not confirmed by the findings of this study (non-fatal m = 29.9; SD = 8.6 and fatal abuse cases m = 31.3; SD = 10.8).

The important factor in this analysis, however, is that perpetrators of all abuse tend to be disproportionately younger. This finding serves to provide child protection professionals with another valuable perpetrator characteristic in developing a profile of caretakers most likely to threaten the safety of children.

It is predicted that where there is a case of fatal child abuse, White, non-Hispanic males will represent the largest number of abusers, but Black and Hispanic males will be over-represented in comparison to their respective counterparts in cases of non-fatal child abuse.

As stated in chapter four, this hypothesis could only be tested on data relating to White and non-White males since the Florida Safe Families Network (FSFN) does not track ethnicity. It records race as Black or White, but does not record ethnicity. Therefore, racial data was coded as White and non-White. The findings in this study do not confirm this hypothesis. In fact, White males in Florida not only abuse children at a higher rate than non-White males, as they are the single largest group of males in the general

population, they are also over-represented in comparison to non-White males. Non-White males are under-represented in comparison to their percentages in the general population.

It is predicted that in cases of fatal child abuse, the perpetrators are more likely to have used or abused illegal substances than their counterparts in cases of non-fatal child abuse.

There is a strong and significant relationship between the perpetrator's drug abuse history and child abuse. However, the analysis of data in this study suggests that the abuse of substances is more prevalent in non-fatal child abuse cases than in fatal child abuse cases (38% vs. 24%). This finding contradicts many study findings that suggest involvement with drug use by the perpetrator increases the likelihood that he or she will abuse a child to death, a consistent finding by the Florida Death Review Committee. However, the disparity between the findings of this study and those of the death review committee may lie in the fact the Florida Death Review Committee does not distinguish between child deaths arising from abuse and child deaths arising from neglect, making it quite possible that when evaluating the prevalence of substance abuse in both child abuse and neglect death outcomes the committee's findings are supported by objective data. It is no doubt that substance abuse is a key factor in many child maltreatment cases and is, according to the findings in this study, present in 63% of all cases, regardless of the outcome. However, the data analyzed in this study indicate that although the use or abuse of illegal substances was present in a total of 63% of all child maltreatment cases only 24% was

associated with fatal outcomes. Thus, this independent variable drops out of the regression model as having a significant impact on death outcomes.

It is predicted that there will be relationship between fatal child abuse and the perpetrator's total number of arrests.

This variable was retained in the regression model and revealed that total arrests is a significant predictor variable in child death cases. Total number of arrests as a predictor variable in this study suggests that only in about 24% of cases does this variable contribute to abuse resulting in fatality to the child victim. Other studies have never correlated child abuse deaths with the perpetrator's total number arrests, thus never having established a cause and effect relationship. Nor have any other studies had findings that indicate increased arrests are correlated with a reduction in the likelihood of abuse resulting in death. If the perpetrator's total number of arrests was for violent acts, then a plausible explanation could be found in the fact that violent arrests are a unique category that deserves further study. It is also quite possible that increased arrests also leads to increased access to treatment, thus reducing the likelihood of poor impulse control behavior resulting in death. Moreover, it is possible that the perpetrator's arrests have resulted in greater scrutiny by law enforcement and other regulatory agencies, thus reducing his or her opportunities to abuse children. Finally, it is possible that the perpetrator's arrests resulted in the increased likelihood of removal of the offender and/or the child from the home following an initial report of abuse.

What risk and protective factors associated with perpetrator characteristics contribute most to increased risk of fatal child abuse as opposed to those that result in non-fatal child abuse?

Four variables in this study contributed to developing a profile of who the perpetrators are in child abuse non-fatal and fatal abuse cases. One variable, the perpetrator's relationship to the child victim is a risk factor that contributes to abuse fatality. Three other variables (perpetrator prior abuse report history, total number of arrests and history of violence) are protective factors that seem to contribute to non-fatal outcomes.

The findings related to perpetrator history of violence demonstrate that men characterized by high levels of antisocial/criminal behavior are most likely to engage in concurrent forms of family violence (Dixon, Hamilton-Giachritsis, Browne and Ostapuik, 2007). There are women who have violent histories, but their numbers have traditionally been reported to be far less than those of men. However, this study suggests that biological mothers fatally abuse children more often than biological fathers, even when fathers are combined with paramours who are almost always male.

Perpetrator relationship to the child victim indicates that although mothers and fathers abuse children at about the same rate there is no distinction by gender as to who will abuse a child to death. Paramours, while abusing children at a lower rate than biological mothers and fathers, almost always abuse their child victims to death, making them especially lethal to children. Regardless, there is a strong relationship between the perpetrator's relationship and poor outcomes for child victims of abuse. This relationship

owes its significance to the role mothers and fathers play in abuse and to the fact that paramours are very dangerous to children.

The total number of perpetrator arrests, history of violence, and a history of prior abuse reports are protective factors that reduce the likelihood that a child abuse case will result in a fatality. As mentioned earlier is this study, this finding could very well be related to perpetrators' access to treatment interventions that mitigate explosive behavior resulting in the death of the child victim or the abuse itself increased the likelihood of removal of the perpetrator and/or the child following an early report of abuse. As it relates to the perpetrator's prior abuse report history, it is quite possible that this finding is related to the fact that although there are multiple substantiated abuse reports the violence does not escalate to the severe fatal act seen in abuse reports with fewer acts of violence. In fatal cases, however, there is an absence of the escalation pattern of violence as seen in domestic violence cases. In fatal child abuse cases the violence most often takes the form of a single explosive act resulting in death, whereas in domestic violence cases the violence most often escalates in frequency and intensity over time. This difference may be due to the physical vulnerability of the respective victims. Children are simply more frail than women victims and it may be that the violence toward children in domestic violence cases is not as severe because they are most often not the primary focus of the abuse. Although children of battered women are at enhanced risk for escalated and severe abuse from their fathers and stepfathers (McCloskey, 2001) this abuse most often does not result in death to the child. Caution

should be applied in interpreting this data because prior to 2008 the Florida Death Review Committee only reviewed child death cases that had at least one prior abuse report. Therefore, it is quite likely that the methodology of case review selection may have skewed the analysis of this study variable.

Additional Finding

A prior history of abuse reports was positively correlated with non-fatal child abuse. Data analyses in this study indicate that in cases of fatal child abuse, only 40% had a prior history of abuse, while 58% of perpetrators in non-death cases had a prior history of abuse. The relationship between case type (fatal vs. non-fatal abuse) and perpetrator prior history of abuse reports is strong and significant χ^2 (3, N = 1146) = 34.972, p > 001. Adjusted odds ratio for perpetrator history of prior reports indicates that there is only a 29% risk that the perpetrator will engage in abuse that results in fatality to the child victim.

It must be noted that while these findings are valuable to child abuse investigations in Florida, they cannot be generalized beyond the state of Florida because until 2008, Florida's death review system only reviewed those cases that had a previous confirmed abuse report. This differed from other states such as Kansas that have reviewed all child deaths regardless of etiology since its inception.

Study Strengths and Limitations

The strengths of this study lie in its revelation of both risk and protective factors related to perpetrator characteristics. The risk factor (perpetrators' relationship to the victim) has been known to researchers for

decades and this research further strengthens those findings. A surprising finding that adds strength to this study is that although prevalent in many studies, substance abuse is not a significant predictor of fatality in cases of child abuse.

The protective factors (perpetrator prior abuse report history, history of violence, and total number of arrests) seem counterintuitive, but appear to indicate that the existence of a history of prior abuse reports and non-alcohol related arrests, mitigate abuse that will end in death to the child victim. To put it another way, it appears that perpetrators who abuse children to death are more prone to engage in a single fatal act, rather than repeatedly abusing a child until death is the ultimate outcome. It also appears that repeated interface with law enforcement and the child protection systems may offer perpetrators greater access to impulse control treatment than their counterparts who abuse children to death. It is quite possible that these perpetrators are less likely to abuse their victims to death because they are under greater scrutiny by law enforcement and other agencies charged with child protection, thus impeding the perpetrator's abusive behavior.

This study included a study group of 501 death and 648 non-death cases, thus achieving a small effect size (Green, 1998). A small effect size allows for the findings of this study to be generalized to the entire population of fatally and non-fatally abused children in Florida. Additionally, the study group which was selected from cases occurring from 2003 to 2008 was obtained from the Florida Death Review Committee reports and included only those child death cases that had at least one previous report of abuse.

Therefore, the total number of child death cases during that time span was not included in this report. That fact alone could have affected the finding related to a history of prior child abuse reports by perpetrators. Beginning in 2008, the Florida Death Review Committee began reviewing all child deaths regardless of etiology. This promises to offer a more complete picture of fatal child abuse cases going forward. Fortunately and unfortunately, that review may be several years away because it will take that length of time before the study group will be large enough to establish generalizability. In the intervening years, perhaps the collective efforts of families and child protection professionals will significantly reduce the number of child abuse cases in general, and fatal abuse cases specifically, making such a study unnecessary. In addition, it is clear from this study that several of the findings differ greatly from those of other studies conducted in other states or in national studies. Therefore, it is highly possible that future studies using Florida data may be only generalizable to Florida.

The insertion of perpetrator characteristics into this study's logistic regression model improved the model by a maximum of 11% increase in the variability in the dependent variable. There may be a direct link to the fact that the data elements collected did not include perpetrator ethnicity, income, academic achievement, and marital status. Had these data elements been captured for the time period of this study, it is quite possible that a significantly greater amount of the variability in the dependent variable could have been accounted for. This conclusion is supported be findings from other studies that consistently indicate income, and academic

achievement are variables that affect fatal child abuse outcomes. Other studies are mixed as to whether ethnicity and marital status affect fatal child abuse outcomes.

Additionally, the reduced variability in the dependent variable may be, in part, limited because this study was purposefully focused only on factors at the microsystem level of the ecological model. This limited focus was necessary because the study questions provided an opportunity to understand perpetrator characteristics in a way sparsely reported in the literature. In fact, there is only one other study (Yampolskaya, Greenbaum and Berson, 2009) that tests the hypotheses contained in this study. There are, however, relevant questions growing out of this study that apply to all levels of the ecological model and should be evaluated in future studies.

Conclusion

As illustrated in Table 4.1 and Figure 2, perpetrators in fatal and non-fatal abuse cases are quite similar in age, race and gender, with mothers being represented in both the non-fatal and fatal categories at a slightly higher percentage than men. This data illustrates the difficulty in identifying alleged perpetrators who are likely to injure children based on demographic profiles, making it especially difficult for child protection professionals to accurately assess who are and are not most likely to represent high risk to children. This may be due to the societal expectation that since women give birth to their children, they would not be the leading group of abusers regardless of the outcomes. After all, the socially accepted belief is that mothers are more apt to protect, rather than harm their children.

Child demographics as presented in Figure 3 reveal similar results as do those of adult perpetrators. While age is a significant factor in all abuse cases, meaning the child victim is more likely to be between the ages of 0 to 3, there is not a statistically significant difference between death and non-death cases. Race and gender reveal a similar pattern, meaning there is no statistically significant difference between death and non-death cases. In this study, those similarities can be explained because child demographics were used as predictor variables in calculating the propensity score matching of fatal and non-fatal abuse cases. Nevertheless, young children are most vulnerable to abuse, especially abuse resulting in death. The strength of this lack of distinction is that it provides child abuse professionals clearer indicators of which children are greater risk of being abuse most often and most seriously.

This study has produced some clear data from which we can begin to develop profiles of all perpetrators of child abuse and distinguish them from perpetrators of fatal abuse. Perpetrators are most often young (18-31 years of age), and mothers abuse their children to death at an alarmingly higher rate than any other group of caretakers.

The perpetrator's history of domestic violence was not retained in the logistic regression model used in this study. The perpetrator's relationship to the child victim matters. Mothers and fathers as a group are the worst offenders in child abuse cases in Florida and they are almost always young.

White men and women account for the greatest number of perpetrators, and white men exceed their representation in the found in

other studies. While there are a sizable number of non-white perpetrators they do not exceed their representation in other studies. Perpetrators in fatal abuse cases had fewer confirmed reports (m=1.47; SD = .717) than perpetrators in non-fatal cases (m=1.64; SD = .810). In the final analysis, the race of the perpetrator is not statistically significant and should not be strongly considered in child protection work when trying to establish risk to a potential child abuse victim.

For child victims of abuse, this study confirms findings from other studies that young children between the ages of 0 and 3 are most likely to be abused than older children and the younger the child within this age group, the greater the likelihood they will be abused to death (Jason, 1984; Chalmers, Fanslow, Marshall & Langley, 1993). They are most likely to be male, but their race is not significant.

While this study is strongly focused on the distinguishing characteristics of perpetrators of child abuse, the long-term negative effects on children who survive abuse should not be lost. Many of these children will suffer difficulties well into puberty and adulthood. According to ecological theory, if the relationships in the immediate microsystem break down, the child will not have the tools to explore other parts of his environment. These deficiencies show themselves especially in adolescence and anti-social behavior, lack of self-discipline, and inability to provide self-direction (Addison, 1992).

Implications for Social Work Practice

Microsystem Level. For many decades work in the field of child protection has been considered among the most challenging in public social services. Despite the best efforts of individuals, agencies, states and the federal government protecting the safety of vulnerable children continues leave our collective efforts wanting. In Florida, from the time the death review committee was created in 1999 through the present, the number of children who have died annually from abuse has continued to hover in the 80 to 120 range. Despite the development of multiple child abuse risk assessments, a proliferation of laws and agency policies and policy changes, increased attention by researchers, and the best efforts by social workers, and other child protection professionals, these deaths continue. Social work practitioners simply must have better ways of assessing potential risk to children. This research offers one risk and three protective factors, rooted in child abuse perpetrators' profiles that have the potential of aiding social workers in conducting child safety assessments. At the microsystem level these findings should aid social workers and other child protection professionals in more keenly identifying caretakers who are most likely to purposely injure children. There are countless incidences in which non-significant perpetrator characteristics confound investigations and often send them off onto the wrong path. Through this research we now have a better understanding of perpetrator characteristics that need careful scrutiny as well as those to which valuable investigation time need not be allocated.

Mesosystem Level. This study has focused exclusively on identifying perpetrator characteristics between the child and his or her abuser. However, this practice cannot be most effective unless social workers and other child protection professionals consider the role the child's immediate and extended family, and his or her neighborhood, plays in keeping them safe. It is documented that children who are well-connected to a strong support system do better on a number of success indicators than children who are disconnected and isolated from others. Thus the requirement of social workers in all alleged child maltreatment cases to assess the availability of a support system in the process of establishing the level of risk to which the child is exposed.

Macrosystem level. For more than twenty-five years the Florida legislature has promulgated major policy changes following almost every sensationalized child death. From Bradley McGee in the mid-nineteen eighties to Kayla Mckean to Rilya Wilson in the late nineteen nineties, policies affecting practice change to policies providing for the prosecution of child welfare professionals have been implemented with little apparent affect on child abuse deaths, particularly those under investigation by child protection professional or in the care of child welfare agencies. In fact, one could speculate that, at best, it has not improved outcomes and, at worst, it has contributed to a worsening of child protection efforts. There is anecdotal evidence that after each sensationalized child abuse death, there is an immediate increase in the number of abuse reports and the number of children being removed from their homes, reflecting a "knee jerk' reaction by

child protection professionals to ensure that no possible mistakes will be made in protecting children. On many occasions, this behavior has been criticized by some child advocates as being too heavy-handed and placing children who could otherwise safely remain with their families in greater danger of psychological and physical abuse. In almost all situations in which this rapid increase in the number of investigations, child protection staff are placed at greater disadvantage because of increased caseloads.

To further aid social work practice the contribution of political decisions/actions at this level of the ecological system must be evaluated and findings, if any, must be incorporated into practice.

Research to Practice

It is not rare that social workers and other child protection professionals who investigate serious and complicated allegations of abuse are using practice methods developed more than twenty years ago; practices that have long been shown not to have the efficacy once attributed to them. Countless research studies have identified relevant practice models that, if implemented with fidelity, produce better child safety outcomes. Yet, traditionally unproven practices persist primarily because there has been little attention given to how to best bring the latest research to practice. This becomes social work's most important challenge and social workers must be in the forefront of defining ways to more readily get cutting edge research into the field in ways that it is easily understood and simple to implement.

Implications for Future Social Work Research

The Florida Safe Families Network, the data system from which comparison group data for this study was obtained was replete with missing data, requiring that individual case files be searched. Although better, the data retrieved from case files housed in the Florida Department of Health also had missing data. In order for future research to better answer hypotheses and the questions similar to those posed in this study, it is paramount that the state begin collecting complete data and expand the data elements referenced in this study to ensure that future research will produce a more accurate profile of perpetrators who abuse children and those who abuse children to death.

There are no known research findings that ascribe a strong protective value to the perpetrator's prior abuse report history and total number of arrests. While it is preferable to have a second chance after the first confirmed abuse incident to protect the child victim, no one would argue that this is the most opportune place to start prevention of child abuse. Future research should attempt to determine if these variables are truly protective factors or were they retained in the study because of the absence of other risk factors. If they are retained as protective factors, the research will need to focus on answering a number of questions. What unknown and, perhaps, intervening factors, such as greater access to anger and impulse control treatment in the case of total arrests are affecting the outcome in child abuse cases? Is there any crossover within the perpetrator population between the number of arrests and the number of prior abuse reports? If so, how much

crossover is there, is it statistically significant, and, if so, how is it explained. Future research needs to attempt to determine is there statistical significance to support a finding that perpetrators with prior reports and those with violent histories are more likely to have received anger or impulse control treatment?

Although there is some research on the lethality of paramours, additional study is needed to better distinguish their profile from those of other perpetrators because of their increased likelihood to kill their victims.

As stated in the Implications for Social Work Practice section the historical process by which the Florida legislature has passed policies without appropriate review following highly publicized child deaths must be studied to determine short and long-term impact this approach has had on the efficacy of child protection practice, practitioners, and on child safety and family stability outcomes.

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