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# Measurement of Physical Discipline Practices: Is it Potato or Potata? Tomato or Tomata? Or, Should We Call the Whole Thing Off? An Analysis of the Different Measures of Physical Discipline on the Intergenerational Transmission of Violence Hypotheses

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Measurement of Physical Discipline Practices:  
Is it Potato or Potata? Tomato or Tomata?  
Or, Should We Call the Whole Thing Off?

*An Analysis of the Different Measures of Physical Discipline on the  
Intergenerational Transmission of Violence Hypotheses*

A Thesis

Presented to the

Department of Criminal Justice

and the

Faculty of the Graduate College

University of Nebraska

in Partial Fulfillment

of the Requirements for the Degree

of Master of Arts

University of Nebraska

by

Jeremy D. Ball  
January 2001

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THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College,  
University of Nebraska, in partial fulfillment of the  
requirements for the degree of Masters of Art,  
University of Nebraska at Omaha

Committee

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Chairperson Julie Horney  
Date Jan. 12, 2001

## ABSTRACT

The intergenerational transmission of violence hypothesis has been stated in four general ways: “abuse breeds abuse,” “abuse breeds crime,” “abuse breeds violent crime,” and “abuse breeds a life of crime.” Scholars have disagreed as to whether abuse is a dichotomous concept or not— that is, abuse or no abuse. Some researchers have suggested that abuse is on a continuum of severity and frequency of physical discipline ranging from a slap or a spank to the more violent abusive practices such as beatings and burnings. The current study examines the intergenerational transmission of violence hypotheses using this broader concept.

The question of this study is not whether these hypotheses are valid in predicting adult behavior but whether some physical discipline measures are more relevant than others. The current study sampled 719 inmates from a Nebraska intake correctional facility. The data collected were retrospective accounts of past physical discipline experiences measured five different ways: ever physically disciplined, severity of discipline, combination of variety and frequency of discipline, variety and severity of discipline, and variety, frequency, and severity of discipline.

The results indicate that the “ever physically disciplined” measure is more relevant than the combination measures in their relationship to the respondent’s likelihood of ever disciplining his child. However, the more complex measures are more relevant in their relationship to the likelihood of committing violent crime and the likelihood of early onset. This result suggests that when a respondent experiences chronic severe physical discipline, he is more likely to commit a violent crime and begin a life of crime early.

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## INTRODUCTION

Many authors have attempted to predict future aggressive and/or violent behavior. Some predictions have focused on the intergenerational transmission of violence hypothesis – that is, those who experience violence as a child through physical discipline are more likely to engage in violent behavior as adults.

There are different outcome variables that have been used in examining the intergenerational transmission of violence hypothesis. Most of the research has been devoted to examining two of these outcome variables: use of physical discipline and involvement in violent crime. Some research has extended this research to general criminal involvement. One study has even examined how physical discipline as a child can affect one's involvement in a lifelong career in criminal activity.

In examining the intergenerational transmission of violence hypothesis, there are issues in defining whether particular parenting practices are abusive or not. Some authors have suggested that parenting practices are either abusive or they are not. Other authors have suggested that parenting practices are on a continuum from not abusive to extremely abusive. These authors suggest that the concept of abuse is more dynamic in which the degree of the severity and/or the frequency of discipline practices may be more relevant as a measure rather than whether the respondent was abused or not. The goal of the current study is not to explain *why* the relationship between discipline and future adult behavior exists but simply explore *what* that relationship is when using different measures of physical discipline practices.



## LITERATURE REVIEW

Although the current study merely explores the relationship between past abuse and future involvement in adult behavior and does *not* explore the reasons for this relationship, examining the different theoretical perspectives in predicting aggressive and/or violent behavior lays a foundation for the current analysis. The literature on the intergenerational transmission of violence has most often utilized social learning theory. However, other authors have identified other theoretical explanations for predicting aggressive and/or violent behavior.

### *Theoretical Perspectives*

One of these theories is Wolfgang and Ferracuti's (1982) subculture of violence theory. Wolfgang and Ferracuti (1982) suggest that particular groups of people define particular aggressive and/or violent actions as appropriate or even necessary in response to certain provocations. The subculture does not always succumb to violence as its only response but only when it is deemed *necessary* in the wake of provocation or insult (Wolfgang & Ferracuti, 1982).

Another of these theoretical explanations is stress theory. A set of criminological theories known generally as anomie/strain theory (see Agnew, 1992; Cloward & Ohlin, 1959; Cohen, 1955; Merton, 1938) can be included in this general category. However, one author – Keith Farrington (1986) – has suggested a stress theory that specifically examines the impact of stress on violence within the family.

Farrington (1986) addressed particular stressors within the family structure – economic stresses, stresses about appropriate child-rearing, and stresses about

sexual relations within the marriage – and how those stressors influence a parent’s violent responses. Farrington (1986) suggested that violence and aggression directed at children and spouses were merely one possible response to stressful stimuli. Farrington (1986) took a perceptual approach in determining how stress plays a role in physically abusive parenting practices. The parent’s subjective perception as well as the objective demand of the situation resulted in a response within that individual’s capabilities.

Although these alternative theoretical perspectives are important and relevant to understanding future aggressive and/or violent behavior, one of the most popular theories in studying the intergenerational transmission of violence is social learning theory (see Akers, 1985; Bandura, 1973). In his most famous illustration of social learning, Bandura and his colleagues studied the effects of a child’s observation of an adult aggressively attacking a large plastic doll (Bandura, Ross, & Ross, 1963). They found that children who observed the adult performing aggressive acts toward the doll imitated this act and performed similar aggressive acts toward the same doll (Bandura et al., 1963).

Social learning theory has its limitations, though. Although social learning theory stresses the long-term impact of learning parenting techniques by imitation and observation (Herrenkohl, Herrenkohl, & Toedter, 1983; Simons, Wu, Johnson, & Conger, 1995), early experimental studies have consistently shown only short-term modeling of aggressive behavior (Bandura, 1973, Bandura, et al., 1963). Few studies have addressed long-term consequences of modeling aggressive behavior (Widom, 1989b). Also, most of the studies finding short-

term modeling effects were performed in a laboratory setting and difficult to generalize to aggressive behavior on the street (Widom, 1989b).

Social learning theory proposes that learning aggressive behavior occurs through *modeling* aggressive behavior. Studies have often linked aggressive behavior to a child's witnessing aggressive behavior of his/her parents and modeling that behavior. However, actual exposure to physical discipline may be more salient than observation and may have a stronger effect on future behavior. "[E]xposure to abusive discipline as a child increases the risk for reliance on severe discipline techniques as a parent." (Herrenkohl et al., 1983, p. 315). Pfouts, Schopler, and Henley (1981) actually found that abused individuals participated more in deviant behavior than those who were merely bystanders to family violence. One's experience may be all he or she knows. "People tend to have only a superficial understanding of the routine parenting practices used in families other than their own. Hence, in the absence of competing models, they are likely to accept the practices of their parenting as typical." (Simons, Witbeck, Conger, & Wu, 1991, p. 160).

The current study focuses on the social learning perspective. Although, traditionally, the social learning perspective focuses on modeling of behavior that is *observed*, the current study concentrates on the impact of personal *exposure* to abusive parenting.

### ***Kinds of Abuse***

In examining the intergenerational transmission of violence hypothesis, many authors have used several different definitions of abuse. Many studies have

examined the effects of physical punishment (Herrenkohl, et al., 1983; Kratcoski, 1982; Rivera & Widom, 1990; Smith & Thornberry, 1995; Spinetta & Rigler, 1972; Weeks & Widom, 1998; Widom, 1989a, 1989c, 1992), neglect (Rivera & Widom, 1990; Smith & Thornberry, 1995; Spinetta & Rigler, 1972; Weeks & Widom, 1998; Widom, 1989a, 1989c, 1992), and sexual abuse (Kratcoski, 1982; Rivera, 1990; Smith & Thornberry, 1995; Weeks & Widom; Widom, 1989a, 1989c, 1992; Widom & Ames, 1994). Other forms of abuse that have been studied were emotional abuse, moral/legal abuse, educational abuse, and a lack of supervision (Smith & Thornberry, 1995; Spinetta & Rigler, 1972).

Practically, different forms of abuse – physical, neglect, and sexual – may have different effects on later behavior (Widom, 1988). Therefore, research should avoid treating abuse and neglect similarly (Simons et al, 1991; Widom, 1989b). In order to assure that the effects of physical discipline practices do not get confused with the effects of other forms of discipline practices, the current study focuses on physical discipline alone.

### ***Outcomes Considered***

#### ***Abuse Breeds Abuse***

Curtis (1963) posed the question of whether violence breeds violence. Many researchers since then have examined many forms of this hypothesis. One of these hypotheses is the “abuse breeds abuse” hypothesis. This hypothesis suggests that an individual who had been abused as a child by his parent(s) or caretaker(s) is more likely, as an adult, to abuse children under his care than an individual who had not been abused (see Gelles, 1980; Straus, 1983; Gil, 1973;

Herrenkohl, et al., 1983; Hunter & Kilstrom, 1979; Simons, et al., 1991; Simons, et al., 1995; Widom, 1989b).

Several studies have reported wide ranges of estimates for the intergenerational transmission of abuse. In a review of the literature, Kaufman & Zigler (1987) noted a range of 25-35% rate of intergenerational transmission of abuse. In other words, about one-third of those who are abused as children turn around and abuse their own children. In a review of studies examining the intergenerational transmission of violence, Widom (1989b) found a top rate of intergenerational transmission of abuse of 70% (as reported by Egeland & Jacobvitz, 1984). Widom (1989b) does not suggest, though, that the “pathway (of the transmission of abuse) is straight or certain.” (p. 24).

Herrenkohl et al. (1983) studied the effects of severe discipline of children on later adult behavior. In their examination of the “abuse breeds abuse” hypothesis, they found that 56% of those who reported having been abused by one or more caretakers reported abusing their own children. Although the pathway may not be straight or certain, many scholars in the field do agree that there is *some* evidence to support the intergenerational transmission of abuse.

Some scholars have suggested that there may be other variables that may confound the impact of abuse on subsequent parenting techniques. Kaufman and Zigler (1987) have suggested that the effects of social and economic stresses should not be separated from past abuse variables in determining its impact on subsequent use of abuse on their own children. The transmission of abuse from one generation to another may be an effect of the “transmission of economic

stress.” In other words, individuals from a lower socioeconomic status as a child may be more likely to be in a lower socioeconomic status as adults. Therefore, they may have the same types of stresses that their parents had. Their aggressive behavior as an adult, then, may have been directly linked to the presence of economic and social stresses rather than whether their parent(s) abused them or not. Spinetta and Rigler (1972) have countered, though, that “economic and social stresses alone are neither sufficient nor necessary causes for child abuse.”(p. 297). In a review of the literature, they note that although more stressors are prevalent in abusing families in lower socioeconomic segments of the population, most families in these segments are not abusive towards their children (Spinetta & Rigler, 1972).

#### *Abuse Breeds Crime*

Another intergenerational transmission of violence hypothesis is that abuse during childhood “breeds” general criminal behavior. This hypothesis states that those who are abused as children are more likely to commit crimes as adults. Widom (1989c) reported that abused/neglected individuals are at a higher risk of engaging in delinquent and criminal behavior. For example, 29% of those who had an official record of abuse/neglect had an adult criminal record as compared to only 21% of the subjects who had no official report of abuse/neglect (Widom, 1989a; 1989c). More specifically, using odds-ratios from a logistic regression analysis, abused and/or neglected subjects were almost twice as likely to have an adult criminal record than subjects who had no formal report of abuse and/or neglect (Widom, 1989a; 1989c).

Smith and Thornberry (1995) conducted a bivariate analysis between abuse and the likelihood of delinquency. They found that there was a significant relationship between abuse and the likelihood of both official and self-reported delinquency (Smith & Thornberry, 1995). More specifically, 45% of abused subjects had an arrest record as compared to only 32% of non-abused subjects (Smith & Thornberry, 1995).

Findings from Alfaro's (1981) study indicated that a disproportionate amount of delinquent youth had been abused and/or neglected earlier in their childhood. The rate of delinquency among all children between the ages of 10 and 16 in Monroe County of the state of New York was 2%, and the rate of delinquency among the children in the sample was 10% – five times greater (Alfaro, 1981). Less than 2% of the entire youth population had reported abuse and/or neglect. However, of those who were delinquent, 21% of boys and 29% of girls had been abused and/or neglected (Alfaro, 1981). From these findings, there seems to be a strong relationship between earlier abuse and juvenile delinquency.

In order to examine whether a particular type or level of abuse has a different effect on later criminal behavior, Pfouts, et al. (1981) focused their research on distinguishing between observation of abuse and actual exposure to abuse. They found that children who were exposed to family violence – that is, having been abused themselves – have a higher degree of deviant behavior than those who were merely bystanders (Pfouts et al. (1981). Observation is qualitatively different than actual exposure to abuse.

Other variables may confound the relationship of abuse and later criminal behavior. In her studies, Widom (1989a; 1989c) found that age, sex, and race should be controlled in studying the effects of abuse and neglect on adult criminal behavior. “It is particularly striking that two-thirds of the individuals in the highest risk category (oldest, black, abused and neglected males) have an adult criminal record, compared with almost none of the individuals in the lowest risk category (youngest, white, control females)” (Widom, 1989a, p. 263).

Smith and Thornberry (1995) also controlled for sex, racial identity, mobility, and family structure in order to understand the true impact of abuse on later behavior. Smith and Thornberry (1995) studied several outcome variables including different types and levels of delinquency: general, minor, moderate, serious, and violent. Although all bivariate relationships between these outcome variables and abuse were statistically significant, only two of these measures – *moderate* and *violent* – were statistically significant when control variables – sex, racial identity, mobility, and family structure – were held constant (Smith & Thornberry, 1995). Abused subjects reported twice as many *serious* delinquent offenses than non-abused subjects (Smith & Thornberry, 1995).

Although most of the research revealed that there seems to be a relationship between child abuse and later criminal behavior, some research has noted that these relationships may not be very strong. For example, Widom (1989a, 1989c) found that 71% of their abused and neglected group did not have an adult criminal record (Widom, 1989a; 1989c). Perhaps higher base rates of violence, less restrictive definitions of abuse, and a focus on exposure to abuse



rather than observation of abuse might provide a better picture of the relationship of abuse on later adult criminal behavior.

One study – Widom and Ames (1994) – examined the long-term consequences of abuse on adult behavior. Although their research was solely devoted to the long-term effects of *sexual* abuse – whereas the current research is devoted to *physical* abuse – they provided findings that are worth noting. “Long-term consequences of childhood sexual abuse may be manifest across a number of domains of psychological distress and dysfunction, and not necessarily reflected in criminal behavior.” (Widom & Ames, 1994, p. 315). However, they found that none of those who were sexually abused as a child were arrested for incest, child molesting, public indecency, or contributing to the delinquency of a minor in their adulthood (Widom & Ames, 1994).

### *Abuse Breeds Violent Crime*

Much of the intergenerational transmission of violence research has been devoted to the “abuse breeds violent crime” hypothesis. Under this hypothesis, researchers have suggested that violent offenders report higher rates of physical abuse than non-violent offenders (Weeks & Widom, 1998; see also, Zingraff & Belyea, 1986).

Several studies have examined the validity of the “abuse breeds violent crime” hypothesis. Lewis et al. (1985) studied two groups of incarcerated youth. One group was comprised of 9 youth who were charged with murder, and the other group was comprised of 24 youth who had known serious arrests. Lewis et al. (1985) found a strong relationship between early abuse and a later charge of

murder. More specifically, 7 of the 8 boys who were charged with murder – there was only abuse information for 8 of the 9 boys – had been severely abused by one or more parents (Lewis et al., 1985). Almost all of the 8 boys charged with murder had been previously severely abused as compared to only 60% of the non-murder group (Lewis et al., 1985).

In their multivariate panel study, Smith and Thornberry (1995) found that abused subjects reported twice as many serious and violent offenses than non-abused subjects (Smith & Thornberry, 1995). These findings led them to conclude that “maltreatment appears to be a risk factor for the more serious forms of delinquency and not to be a risk factor for the less serious forms of delinquency.” (p. 465).

Widom (1989c, 1992) conducted a matched prospective study utilizing interview and official records data. Widom (1989c, 1992) matched her sample on the basis of sex, race, age, and family socioeconomic status. Widom (1989c, 1992) found that being abused as a child increased the risk of committing violent crimes. More specifically, Widom and Ames (1994) found that abused subjects were at a higher risk of committing violent sex crimes such as rape and sodomy.

More akin to the present proposal, Widom (1989c) examined the effects of physical abuse alone on later violent criminal behavior. Widom (1989c) found that physical abuse – as opposed to neglect or emotional abuse – had the highest levels of arrest for violent crimes.

Not all researchers, though, agree that being physically abused as a child leads to later violent criminal behavior as an adult. For example, over 75% of

juveniles in Kratcoski's (1982) study had at least one violent act irrespective of whether that individual was abused or not. In their examination of self-report accounts of child victimization by adult prison inmates, Weeks and Widom (1998) found no statistically significant differences between violent and non-violent offenders in their reports of physical abuse in their childhood.

However, Weeks and Widom (1998) suggested that the differences might have disappeared during criminal justice processing from arrest to conviction to incarceration. In other words, Weeks and Widom (1998) argue that if the sample was a general sample rather than a sample limited to inmates, there may be more of a difference between violent and non-violent offenders who report abuse in their childhood. As will be discussed later, though, sampling from an inmate pool increases base rates of violent behavior that allow the researcher to examine the effects of abuse on later adult behavior more clearly.

Since all violent youth were not abused as a child and not all abused children become violent, several researchers have called for future research to focus on factors that mediate between presence of risk factors and the occurrence of abuse or violent crimes (Howing et al., 1990; Widom, 1989a).

### *Abuse Breeds a Life of Crime*

Research on the "abuse breeds a life of crime" hypothesis is fairly new. This hypothesis suggests that those who are abused as a child are more likely to engage in a life of crime. A career in criminal behavior is characterized by several components: severity of offending, early onset, chronicity, and continuity

of offending into adulthood (See Blumstein & Cohen, 1986; Wolfgang, Figlio, & Sellin, 1972).

Previous studies have suggested future research in this area.

“Distinguishing the factors that promote the onset of criminal behavior from those that affect persistence in criminal career is clearly an important topic for future research.” (Widom, 1992, p. 3). Therefore, research in this area seems to be of relevant import to the study of the intergenerational transmission of violence.

Those individuals who commit crimes during the course of their life are known as “career criminals.” The first characteristic of these career criminals is that they are more violent than “normal” offenders – that is, those who only commit crimes during their adolescence and young adulthood at which time they terminate their criminal involvement (Wilson & Herrnstein, 1985). In sum, Rivera and Widom (1990) found that those who were abused were at a greater risk of committing a violent offense in their adulthood. According to learning theory, “children socialized into violence who manifest this behavior early retain a commitment to (violent behavior) through the life span.” (Rivera & Widom, 1990, p. 26).

The second characteristic of career criminals is that they begin their offending earlier than most (See Blumstein & Cohen, 1986; Wolfgang et al., 1972). Rivera and Widom (1990) found that, generally, both violent and abused subjects began their offending earlier than non-violent and non-abused subjects, respectively. More specifically, abused subjects began offending at an average age of 16.5 whereas non-abused subjects began offending at an average age of

17.3 (Rivera & Widom, 1990). In a multiple regression analysis, Rivera and Widom (1990) found, though, that abused and non-abused subjects did *not* significantly differ in age at first *violent* offense.

In another multiple regression analysis controlling for current age, Rivera and Widom (1990) found that age of first offense was negatively correlated with number of *any offenses* and with number of *any violent offenses*. In other words, a subject who had started offending earlier had more offenses of any type and had more violent offenses controlling for years of age. Controlling for years of age is important because a subject who is older than another subject has more opportunities to commit crimes but may not have the characteristics of a “career criminal” whereas the younger one may. In other words, age of onset as it relates to number of offenses must be compared within age groups rather than between age groups.

The third characteristic of a “career criminal” is the chronicity of offending. Rivera and Widom (1990) defined “chronicity” as two or more violent arrests. As juveniles, there were many more chronic violent offenders who were abused than who were not abused – almost 12 times more (Rivera & Widom, 1990). As adults, however, this finding had greatly reduced. More specifically, there were only twice as many chronic violent offenders who were abused than who were not abused among adults (Rivera & Widom, 1990).

Another characteristic of the career criminal is continuity of criminal behavior into adulthood. “Despite significant differences in the extent of involvement in violence and the age of onset, non-abused and neglected children

are just as likely as abused and neglected to continue violent offending once they have begun.” (Rivera & Widom, 1990, p. 32). More specifically, among those juveniles with a juvenile record, 34% of those who were abused and 37% of those who were not abused had been arrested for a violent offense as an adult (Rivera & Widom, 1990). Continuation of a criminal career may not be as distinct as first thought.

### ***Methodological Issues***

#### *What is abuse?*

The first potential problem of any particular study is in defining the particular phenomenon of interest. Research on the intergenerational transmission of violence hypothesis often has problems in defining two phenomenon: “abuse” and “violence.” Research on these phenomenon often have similar general definitions but have very different operational definitions (Widom, 1988). This limitation is usually characterized as a lack of specificity in defining outcome variables due to such a wide range of definitions in the research (Widom, 1989b, 1990). Widom (1988) suggests that in order to avoid this specificity problem, research must use explicit criteria in defining these phenomena. The current study attempts to explicitly define all of its variables to avoid these specificity problems.

Defining “abuse” has been one of the most problematic phenomena to define in the research on the intergenerational transmission of violence (Garbarino, 1981; Widom, 1988, 1989b, 1990). “Criteria for child abuse and/or neglect are often questionable, vary widely, and include unsubstantiated cases.”

(Widom, 1989b, p. 4). Therefore, when studying the impacts of parental discipline on later adult behavior, research must be more specific in defining these behaviors in order to get an accurate measure of these potential effects.

Many authors have defined “abuse” in so many different ways. Widom (1989a, 1989c) defines “physical abuse” as that behavior which “knowingly and willfully inflicted unnecessarily severe corporal punishment or unnecessary physical suffering on a child or children.” (p. 256 and 244, respectively). Acts that caused injury such as bruises, welts, burns, abrasions, lacerations, wounds, cuts, and fractures fit this definition (Rivera & Widom, 1990; Widom, 1989a, 1989c, 1992).

Other researchers have not been as narrow with their definition (Rivera & Widom, 1990; Widom 1989a, 1989c, 1992). Straus, Gelles, and Steinmetz (1980) defined “abusive violence” as acts that have a *potential* of injuring the victim regardless of whether the victim was injured or not. This concept not only includes hitting and punching and other injurious acts similar to the ones described above but could also include those actions that come close in proximity to injuring but fail to injure the child such as throwing an object at the child but missing or spanking the child but not leaving any marks or bruises.

#### *What are acceptable parenting practices?*

Another definitional problem is distinguishing actions that are abuse from “acceptable” parenting practices. For example, is spanking a form of abuse or a form of “acceptable” parenting practice? Straus et al. (1980) examined this issue in measuring family violence. In their pilot studies, they found that the distinction

between “acceptable” and “unacceptable” hitting was not as clear as they had hoped (Straus et al., 1980). Defining “acceptable” behavior is virtually impossible in social science research because not only do norms change over time, but also a general consensus may not be reached for some norms.

*Is abuse on a continuum?*

Not only have researchers differed in the substantive meaning of “abuse,” but they also have differed in the methods they use to determine whether a particular individual has been abused as a child or not. Several authors suggest that “abuse” is a dichotomous term – one abuses his child or not (Simons et al., 1991; Weinbach, Adams, Ishizuka, & Ishizuka, 1981). Weinbach et al. (1981) suggest that discipline of one’s children is on a continuum of discipline ranging from too little discipline to too much discipline. Simons et al. (1991) suggest that parental discipline implies a continuum based on the severity and frequency of parenting practices. Whether one is abused or not may be less important than the amount of discipline and the severity of discipline one receives.

Straus (1983) also suggests a continuum of parental discipline – ranging from “ordinary violence” to “severe violence.” “Ordinary violence” includes actions found in most family discipline relationships such as slapping, shoving, spanking, and/or throwing things whereas “severe violence” goes beyond these actions either threatening or causing serious injury and is more akin to severe child abuse (Straus, 1983). Straus (1983) suggested that what distinguishes “ordinary violence” from child abuse was the continuing pattern of harsh discipline – that is, the frequency of harsh discipline – rather than the severity of the discipline.



There has been some research that has suggested that a continuing pattern of severe physical punishment has long-lasting negative effects. For example, Pfouts et al. (1981) found that as the indications of abuse increased, the overall degree of deviant behavior became more severe. In a sample of over 220 training school juveniles, nearly one-third of the offenders had been beaten at least five times (Pfouts et al., 1981). Kratcoski (1982), similarly, found that among abused delinquents, 85% had experienced abuse on more than one occasion.

Since there are various methods of determining what “abuse” is in studying the intergenerational transmission of violence, the current research examines the effects of “physical discipline” on future adult behavior using each of these methods. Although the term “abuse” has been used throughout the review of the literature, the current study focuses on physical discipline.

The current research, as will be discussed later, examines physical discipline retrospectively. Therefore, there is no official determination of whether the respondent was abused or not. The term “abuse” *will* be used in discussing the different forms of the intergenerational transmission violence hypotheses because this term is most recognizable. However, other authors have suggested that research also examine the more subtle discipline practices that can be found on a continuum of severity and frequency that may not be detected by an official determination of abuse.

### *Outcome Measures*

Similar to “abuse,” researchers have defined “violence” in many different ways. First, is *violence* only limited to those actions that are considered criminal?

In studying the intergenerational transmission of violence hypotheses, some researchers have focused merely on violent criminal behavior. For example, Kratcoski (1982), Widom (1989a), and Rivera & Widom (1990) have all established – in one form or another – that some crimes are violent. For example, some criminal acts – such as most forms of homicide, assault, robbery, and rape – are clearly violent and are used in all of these studies. However, researchers have not reached a consensus among other crimes. For example, Kratcoski (1982) suggests that arson, kidnapping, breaking and entering an inhabited building, threatening behavior, and menacing are all violent offenses whereas Widom (1989a) and Rivera & Widom (1990) do not accept these crimes as “violent.”

Other scholars have broadened their definition of “violence” to include aggressive acts that may or may not be criminal. Steinmetz (1986) suggests that violence is “an act carried out with the intention of, or perceived as having the intention of, physically hurting another person.” (p. 52). This definition of violence includes acts ranging from a slap to murder. This definition includes many different levels of violence.

Another question might be is whether *violence* is only limited to those actions that create injury? Strasburg (1978) suggests that violent behavior is “illegal use or threat of force against a person.” (p. 6). Straus (1983) defined violence more narrowly to include threats of force that may or may not cause injury. According to these definitions, threatened injury is enough to indicate violence.

Merely defining “abuse” and “violence” under specific criteria does not completely avoid these problems. For example, there may be disagreement as to what the different levels or “rankings” of which parenting practice is more serious than another or whether threatened force is similar to actual force.

### *Research Design*

Another potential problem with this research is in the design used. Widom (1988, 1989a, 1989b, 1990) has suggested that a prospective design is more appropriate than a retrospective design. Retrospective designs often include problems of accuracy of the information recollected or collected (Widom, 1989b, 1990). “Often there is no medical or direct evidence of the severity, frequency, or chronicity of abuse.” (Widom, 1989b, p. 5). Widom (1990) has termed this “retrospective recall bias” in which “distortion and loss of information from recalling events from a prior time period” is virtually inevitable (p. 142). Under this bias, it is possible that subjects perceive past events within the context of present events and circumstances (Widom, 1989b).

### *Sampling Techniques*

Another problem with research on the intergenerational transmission of violence hypothesis is the lack of adequate sampling procedures. Many studies have generated convenience-sampling procedures (Widom, 1989b, 1990). Convenience sampling procedures often do not have the predictive power, as do randomized sampling techniques due to the lack of randomness and generalizability. Also, many studies use small samples for this type of research. Large samples are necessary to provide more reliable estimates of outcome

variables (Widom, 1988). Without stronger sampling procedures, it is difficult to predict particular phenomenon adequately, and it is difficult to generalize out of a particular sampling group.

#### *Lack of Control Groups/Base Rates*

Another problem with research in this area is the lack of use of control groups or comparison groups (Widom, 1988, 1989b, 1990). Widom (1988) suggests that control/comparisons groups are necessary to accurately evaluate independent effects of child abuse on later behavior. Widom (1988) argues that, without a comparison group, it is difficult to truly understand the effects of a particular phenomenon on another phenomenon.

Using control/comparison groups allows the researcher to understand the base prevalence rate of a particular phenomenon and to compare this rate to the rate of the group under study. Base rates are important to assess the strength of the findings and the magnitude of relationships between variables (Widom, 1988, 1989b). Much of the research that has utilized control/comparison groups, though, has sampled general populations. One problem with this type of research, though, is that it produces low prevalence rates of violence (e.g., Wolfgang et al., 1972) which reduces the impact of the true effects.

#### *Self-Report v. Official Measures*

Another potential problem with research on the intergenerational transmission of violence hypotheses is the type of measure one uses. There is debate as to which type of measure – self-report or official record – is more

accurate in measuring the effects of abuse on future behavior. There are advantages and disadvantages with both types of measurements.

Official records in criminal justice research are often centered on arrests and convictions. There are many advantages in using officially recorded data to measure the desired outcome variables. First, validation of data found in official records has been sound for the most part (Hindelang et al., 1981). What is reported in officially recorded data is known and not guessed (Alfaro, 1981). Second, interview and survey methods often allow the respondent to interpret the questions subjectively and answer accordingly. Official record measures, on the other hand, are more objective in recording responses because researchers often predetermine definitions of terms and procedures in collecting data.

Officially recorded measures are not without their problems. First, official records often have missing data for one reason or another which poses a problem in interpreting the results of the study (Kaufman & Zigler, 1987; Kratcoski, 1982; Widom, 1989c). The official records are only as good as the competency of the reporters and recorders of this information. Second, official records often lack appropriate comparison or control groups (Alfaro, 1981; Hindelang et al., 1981; Kaufman & Zigler, 1987). Third, research based on official arrest records only indicates violent *criminal* behavior and not general violent behavior (Widom, 1989c). Fourth, legal definitions differ from jurisdiction to jurisdiction and from time to time (Hindelang et al., 1981). Fifth, some agencies may not report offenses when more than one offense was included in the arrest and/or conviction.

Therefore, there may be some problems in dealing with multiple offenses and multiple victims (Hindelang et al., 1981).

Self-report measures are different from official records in many different ways. They have particular advantages over official records. First, self-report measures allow the researcher to obtain information that goes unreported or undetected by official records (Hindelang et al., 1981). Although there is a potential of recording error in self-report measures, this type of error is more of a problem for official measures. Second, like official records, validation efforts of self-reports have been successful (Hindelang et al., 1981). Third, consistent geographical coverage is possible and realistic (Hindelang et al., 1981). Rather than relying on several jurisdictions and agencies, the same self-report measure could be used across very different jurisdictions and agencies, and the results would not depend on the policies of any particular jurisdiction and agency.

There are some disadvantages, though, in using self-report measures in testing the intergenerational transmission of violence hypothesis. First, self-report measures may be inadequate because people are unable or unwilling to report criminal behavior or behavior that might be socially unacceptable (Hindelang et al., 1981; Widom, 1989b; Widom, 1990). Widom and Ames (1994) suggest that a person may give false statements in hopes of more positive treatment. There is also no empirical evidence to suggest that these false statements are a common occurrence (Widom & Ames, 1994). Second, respondents within the sample may interpret the items in a self-report survey or interview differently (Widom, 1988). Therefore, the findings may be inconsistent and invalid. Third, response rates are

almost always lower than official records since official records – theoretically – include *all* known cases whereas self-report measures depend on respondents' willingness to participate (Widom, 1988).

Although there are seemingly many limitations to the study of the intergenerational transmission of violence hypothesis, “it is no longer apparent where, if at all, important, systematic bias in the measurement of delinquency is to be located.” (Hindelang et al., 1981, p. 25). That is, whether research uses self-report measures or official measures is virtually irrelevant. Widom (1988) suggests using multiple measures to minimize research biases. The current research utilizes a combination of both measures.

### ***Summary of the Literature***

The literature generally supports the intergenerational transmission of violence although the effect of past abuse does not automatically yield future aggressive and/or violent adult behavior. Social learning theorists have purported that aggressive behavior is learned by observing and experiencing behavior of others – especially parents. Social learning theory predicts that violence may transmit across generations of the same family.

The literature has suggested several different forms of the intergenerational transmission of violence hypothesis. The first of these hypotheses is that one who is physically disciplined as a child is more likely to physically discipline his own children. The rates of the intergenerational transmission of abuse range from 25% (see Kaufman & Zigler, 1987) to 70% (see Widom, 1989b). Widom (1989b) cautioned readers that the link between

experiencing abuse as a child and engaging in abuse as an adult may not be as direct as first thought. Other variables to consider are social and economic stresses (see Kaufman & Zigler, 1987).

The second hypothesis states that those experiencing physical discipline as a child are more likely to engage in criminal behavior. Several authors (e.g., Widom, 1989a, 1989c; Smith & Thornberry, 1995; and Alfaro, 1981) found that those who had experienced abuse were more likely to have engaged in criminal activity. Smith and Thornberry (1995) found that childhood abuse predicted criminal behavior – especially moderate and violent criminal behavior. Widom (1989a, 1989c) again cautioned that most abused subjects (71%), however, did not have an adult criminal record. Although most of these studies were based on juvenile delinquency rather than adult criminal behavior, one study (Widom & Ames, 1994) did examine the long-term consequences of abuse and found that none of the abused children were arrested for similar offenses. Their research focused on *sexual* abuse whereas the current study focuses on *physical* abuse. Also, sexual abuse is a unique form of abuse and is potentially coped with by the child in very different ways.

The third hypothesis states that those who are physically disciplined as a child are more likely to commit violent offenses. This hypothesis is one of the most researched of all of the hypotheses. Although their sample was small (n=9), Lewis et al. (1985) found that 90% of the young murderers had been severely abused whereas only 60% of the non-murders had been severely abused. Other researchers (e.g., Smith & Thornberry, 1995; Widom, 1989c, 1992) found that



abused children are at higher risks of engaging in violent criminal behavior. Also, Widom (1989c) found that physical abuse – compared to neglect and emotional abuse – had more of an impact on later violent criminal behavior. Again, though, the relationship between abuse and later violent criminal behavior is not necessarily clear (see Kratcoski, 1982).

The fourth, and newest, hypothesis examines the impact of physical discipline on the indicators of career criminal behavior. One study (Rivera & Widom, 1990) did examine this relationship. They found that abused individuals committed more violent crimes, began their offending patterns earlier, and committed their crimes more frequently (Rivera & Widom, 1990). However, another characteristic of career criminal behavior – continuity of criminal behavior into adulthood – did not have as clear a relationship with past abuse experiences as the other three characteristics.

The literature has generally supported the intergenerational transmission of violence. What the literature has not done is clearly understand the impact of the different measures of physical discipline on each outcome variable. The current study attempts to answer Smith and Thornberry's (1995) question, "[a]re more refined measures of maltreatment. . . more strongly related to delinquency than simple, global measures of abuse?" (p. 455).

### *The Current Study*

The current research examines the relationship between past physical discipline and future adult behavior explained by the intergenerational

transmission of violence hypothesis. With respect to this hypothesis, the questions that the current study attempts to answer are:

- Is someone who experiences physical discipline as a child more likely to physically discipline his own children?
- Is someone who experiences physical discipline as a child more likely to engage in more criminal behavior?
- Is someone who experiences physical discipline as a child more likely to engage in violent criminal behavior?
- Is someone who experiences physical discipline as a child more likely to engage in a life of crime?

Widom (1988) asked whether it is chronic abusive behavior or infrequent explosive abusive behavior that is relevant in studying the intergenerational transmission of violence. The current research attempts to answer this question by examining whether different measures of physical discipline have different effects on the outcome variables of the intergenerational transmission of violence hypothesis. The current study focuses on the effects of physical abuse during childhood on behavior in *adulthood*. Much of the research on the effects of abuse on criminal behavior, though, has been devoted to juvenile delinquency and not adult criminal behavior. Additional questions the current study attempts to answer are:

- What are the different effects, if any, on the outcome variables if physical discipline practices are measured dichotomously or on a continuum?
- If physical discipline practices are measured on a continuum, then what are the different effects, if any, on the outcome variables if physical discipline practices are measured by severity or by frequency?
- Is there an interaction between the severity of physical discipline practices and frequency of physical discipline practices?

As noted earlier, there are several methodological issues in studying the intergenerational transmission of violence hypothesis. The current study attempts to address most of these methodological issues.

First, in order to reduce the problems of specificity that often plagues this type of research, the current study utilizes established definitions of abusive parenting practices in past studies (see Straus et al., 1980; Widom, 1988). The current study addresses harsh physical discipline practices as those actions that have the potential to cause injury. Actions that have the potential to cause injury should elicit similar emotions from the victim as those actions that actually do cause injury. Also, the current study explores different measures of physical discipline – ever physically disciplined, frequency of physical discipline, and severity of physical discipline – to clearly understand the different relationships predicted by the intergenerational transmission of violence hypothesis. These different measures explore the different effects of physical discipline on future adult behavior from a dichotomous standpoint (ever physically discipline) and a continuum standpoint (frequency and/or severity of physically disciplined).

Second, unlike Widom (1988, 1989a, 1989b, 1990), the current study does not utilize a prospective design but a retrospective design that is subject to recall bias. In other words, the subjects in the current study who are currently incarcerated may perceive their present circumstances as a result of harsh discipline practices when in fact it is *not*. However, using inmates in a sample allows the current study to benefit from higher base rates of violent behavior.

Third, as noted earlier, many authors have debated the controversy between the use of self-report data and official records data. Hindelang, et al. (1981) have noted, though, that both methods have their strengths and weaknesses, but both are valid in measuring criminal behavior. The current study utilizes both methods of data collection.

## METHODOLOGY

### *Subjects*

#### *Sampling Procedure*

The study used data<sup>1</sup> collected as part of a large research project (see Horney, 2000) examining offenders' decisions to engage in violent activity and the individual, social, and situational explanations of these decisions. The current study systematically sampled two out of every three inmates entering the Nebraska Department of Corrections for a total of 719 subjects over the course of approximately ten months. This sample was drawn from inmates entering the Diagnostic and Evaluation Unit – an intake prison facility. Drawing a sample from an intake facility assures that all inmates – regardless of length of stay – have the same chance of participating in the study during this period.

99.3 % of the eligible inmates agreed to participate in the study. These response rates were similar to those found by Horney and Marshall (1992). Each subject completing the interview had \$10 deposited into his institutional account. The current study included Spanish-speaking inmates by using a translated instrument and a graduate assistant who was fluent in Spanish.

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<sup>1</sup> The data collection effort upon which this project is based was supported by Grant No. 96-IJ-CX-0015 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

### *Description of Sample*

All of the subjects were male. Although most of Nebraska is a rural state, most of the inmates came from more metropolitan counties – Douglas and Sarpy counties which include the Omaha metropolitan area and Lancaster County which includes the Lincoln metropolitan area. Over half of the inmates were convicted and sentenced in one of these three metropolitan counties.

The racial/ethnic composition of the subjects is 57.8% white and 41.8% non-white. The average age of the sample was 30.51 with only 1.4% (10) of the sample under 18 years of age.

(Insert Table 1 about here)

### *Procedure*

The selected inmates were asked to participate in the current research study. The respondent was given the opportunity to terminate his participation at any time during the process of the interview. After signing an informed consent form, each subject participated in a computer-assisted interview in which the respondent's answers were entered directly on a laptop computer. The length of the interview process ranged from a low of 2 minutes to a high of 11 hours with an average length of approximately 1½ hour.

### *Instrument*

The first section of this instrument addressed inmates' reports on past criminal history, discipline practices of their parents, and their own parental discipline practices. The second section of the interview addressed individual

frequencies of committing crimes. The third section of the interview addressed social demographic information.

The current study also included data from official records. Similar to the interview process, the collection of the official records was computer-assisted. The data collected were demographic information, current charge/conviction information, and prior arrest/conviction information. All but one of the records of the inmates who were interviewed were completed.

### *Independent Variables*

A modified Conflict Tactics Scale (see Straus, 1974) was used to measure discipline practices. In this part of the interview, researchers asked the respondents how often their parents displayed particular behaviors during conflicts with them as a child. See Table 2 for these items. For the purposes of this research, harsh physical discipline practices are defined – similar to the definition used by Straus, et al. (1980) – as those discipline practices that have the potential to result in physical harm. Therefore, “physical discipline” does not necessarily mean behavior that actually results in injury or that can be legally considered as child abuse. Throwing an object at a child during a conflict – a form of “physical discipline” for the purposes of this research – has the potential to injure the child even if the child is actually not injured. Threats of injury towards a child, though, are not physical discipline. Threats of injury are actions that could be defined as “verbal abuse.” Table 2 illustrates items in the modified Conflict Tactics Scales that are “physical discipline” items.

(Insert Table 2 about here)

In each interview, the respondent indicated how often their parents displayed particular responses during conflicts with them as children. The items were answered according to an ordinal scale: “never,” “once or twice,” “sometimes,” “frequently,” and “most of the times.”

The purpose of the current research is to understand how different measures of the same phenomenon – that is, discipline practices – have an impact on the proposed outcome variables. Parental discipline practices were measured in five different ways: ever been physically disciplined, severity of physical discipline, a combination of variety and frequency of physical discipline, a combination of variety and severity of physical discipline, and a combination of variety, frequency, and severity of physical discipline.

First, as stated earlier, several studies have examined physical abuse in the intergenerational transmission of violence in terms of a dichotomy (Simons et al., 1991; Weinbach et al., 1981). To measure harsh discipline practices as a dichotomy, the current study examined whether the respondent experienced physical discipline on *any* of the items – listed as “physical discipline” – in Table 2 (coded 1) or whether he experienced physical discipline on *none* of the items (coded 0).

The next few measures of harsh discipline practices attempt to obtain a more precise measure of physical discipline that Straus (1983) tried to emphasize. The second measure the current study utilizes is a measure of severity of physical discipline. Herrenkohl, et al. (1983) operationalized parental discipline practices into three separate severity categories: not severe, severe but not abusive, and

abusive. They suggest that hitting or slapping so as to bruise, biting, or burning fell within the “abusive” discipline category and that spanking with a belt, for example, fell within the “severe” discipline category.

For the purposes of this study, categories of severity of physical discipline were broken down into three dummy variables: non-physical discipline, mild physical discipline, and severe physical discipline. These categories follow as closely to the general guidelines set forth in Herrenkohl et al. (1983) and can be found in Table 2. “Non-discipline” is the same measure as the non-discipline measure above. “Mild discipline” is defined as a non-zero response on at least one of the mild discipline items (see Table 2) and no non-zero responses on any of the severe items. “Severe discipline” is defined as a non-zero response on at least one of the severe discipline items (see Table 2).

The third measure of physical discipline practices utilizes a measure of frequency of physical discipline. Simply summing frequency scores over the physical discipline items would not give an accurate measure of the frequency of general physical discipline due to the lack of continuous measures of frequency. Since there is not a logical way to examine the frequency of physical discipline alone, the current research uses a total composite score as Straus (1979) had suggested. By using a total composite score, the current study not only examines the effects of the frequency of physical discipline on the outcome variables but also the variety of physical discipline. That is, a total score of frequency across the physical discipline items not only measures how often general physical discipline practices occurred but also how many different types of physical



discipline practices were used. Summing across variables as ordinal measures allows the current study to treat intervals equally (see Straus, 1979).

The present study sums the scores across the different physical discipline items ( $D$ ) to get a total score for any particular respondent ( $VF$ ) (see *Eq. 1*). A higher total score does not necessarily

$$VF = \sum D_i \quad \text{Eq. 1}$$

where  $D_i$  = frequency score on any particular item

mean that a respondent experienced physical discipline more often than another respondent. A higher total score may mean that a respondent experienced more types of discipline than another respondent. For example, one respondent may have been spanked frequently whereas another respondent was spanked only once or twice. However, if the first respondent had only experienced spanking as a means of discipline and the second respondent experienced several forms of discipline once or twice each, then the second respondent might have a higher total score. For this reason, the summation over physical discipline scores is realistically measuring variety *and* frequency of physical discipline.

In extending Straus's (1979) suggestion to include a severity measure, the current study uses a combination of variety of physical discipline and severity of physical discipline. The current research codes non-zero responses on "mild" discipline items ( $M$ ) as a 1 and non-zero responses on "severe" discipline items ( $S$ ) as a 2. The current research then sums across all of these items to obtain a composite score (see *Eq. 2*). This composite score ( $VS$ ) indicates a combination of variety of physical discipline and severity of physical discipline.

$$VS = \Sigma(M_i + S_i) \quad \text{Eq. 2}$$

where  $M_i$  = “mild discipline” score on any particular item  
 where  $S_i$  = “severe discipline” score on any particular item

A final measure included in the present research is a combination of variety, frequency, and severity of physical discipline. The current study multiplies the severity code by the frequency code of each item and then sums across all items to obtain another composite score (see Eq. 3). This composite score ( $VFS$ ) indicates a combination of variety, frequency, and severity of physical discipline.

$$VFS = \Sigma(M_i + S_i)F_i \quad \text{Eq. 3}$$

#### *Control Variables*

Other measures are used as control measures to insure that the analyses are accurate. By controlling for other variables, researchers can be assured that they are finding valid results because they control for extraneous variables that may have an effect on the dependent variable. The first control variable is racial/ethnic identity. Racial/ethnic identity is treated as dichotomous variable in which white is treated as the reference category (coded 0) and non-white is (coded 1). Race is included because it has been shown to relate to harsh physical discipline practices and delinquency (see Smith & Thornberry, 1995; Widom, 1989b).

The second control variable is age – measured as a continuous variable. Age is especially important when understanding the impact of physical discipline on later adult criminal behavior. Depending on the age of the respondent, some (older) may have had more opportunities to commit crimes than other respondents

(younger). Therefore, age must be controlled for in studying the effects of physical discipline on later adult criminal behavior.

Many authors (see Kaufman & Zigler, 1987) have suggested that research on the intergenerational transmission of violence should include social/economic stressors as control variables. Therefore, the current study controls for whether the respondent's family was ever on welfare (coded 1) or not (coded 0) as a proxy for economic stress. Family structure can often lead to social stress within the respondent's family (see Smith & Thornberry, 1995). A parent has more opportunity to feel stress if he/she has the sole responsibility of child rearing. The current study, therefore, controls for whether the respondent was in a one-parent home (coded 1) or in a two-parent home (coded 0) as a proxy for social stress.

#### *Dependent Variables*

In measuring whether the different measures of physical discipline have an impact on the respondent's physical discipline of his own children, the current study measures the respondent's discipline of his own children as a dichotomous variable – that is, did the respondent ever physically discipline his own child? Herrenkohl, et al. (1983) performed their analyses of the “abuse breeds abuse” hypothesis with a dichotomous dependent variable.

In the current study, similar to questions about his own experience of physical discipline as a child, a respondent was asked about his own discipline practices in times of conflict with children under his care. Similar to the coding of the dichotomous independent variable above, the current study examined whether the respondent reported disciplining his child using *any* of the items

(coded 1) – listed as “physical discipline” in Table 2 – or whether he used *none* of the items (coded 0).

In order to accurately measure the relationship between the respondent’s experience of physical discipline as a child and his physical discipline of his own children, the current study only examined those cases in which the respondent had the opportunity to discipline children under his care. Therefore, the later analyses of the “abuse breeds abuse” hypothesis only include cases in which the official records indicated that the respondent had at least one dependent. Although the “dependents” listed in the official records *could* have included a spouse, the current study makes the assumption that “dependents” are only children. Almost half (41%) of the total number of respondents had no dependents. Of those respondents without a dependent, only 7.6% (23) reported ever physically disciplining children under their care.

Most research that examines the “abuse breeds crime” hypothesis has defined the dependant variable as whether the subject has committed a crime or not. If the current study defined “crime” as either crime or no crime, there would be no variable since all have committed at least one crime. Defining the dependant variable in this way with a prison sample would eliminate non-criminals from the analysis. Therefore, the current research defines the dependent variable as the total number of non-traffic arrests from the official records.\*

In examining the impact of the respondent’s experiences of physical discipline in the “abuse breeds violent crime” hypothesis, the current study uses

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\* Two traffic arrests are included: driving under the influence (DUI) and vehicular homicide

the official records and defines the dependent variable dichotomously – whether the respondent was ever arrested for a violent offense or not. For the purpose of this study, violent arrests include homicide, sexual assault, assault, robbery, terroristic threats, and use of a firearm.

The final dependent variable that is associated with the “abuse breeds a life of crime” hypothesis is a little more complex than the others. The literature has identified a few characteristics – more chronic offending and a later termination of offending – that define career criminals and other characteristics – an earlier onset of offending and more severe offending – that predict career criminality.

The current study only examines one of these characteristics – reported early onset. The current study only uses this characteristic because the data do not support the examination of the other measures of career criminal behavior. Therefore, the current study cannot complete a full analysis of the “abuse breeds a life of crime” hypothesis. The current study defines “early onset” as a dichotomous term – first involved in a non-traffic offense before age 11.

### *Analyses*

Several analyses are possible with the current data. First, the current study examines bivariate relationships between the different measures of the respondent’s experiences of physical discipline and the different outcome variables described above. These bivariate relationships should give us a “first glance” at the relationship between past physical discipline experiences and the different outcome variables.

Second, the current study examines more complex analyses – ordinary least squares (OLS) regression and logistic regression. Each hypothesis is tested using five separate models. Each model consists of one of the five physical discipline variables along with all of the control variables. The method of analysis depends on the level of measurement of the dependent variable. In OLS, the dependent variable must be continuous. The current research uses OLS for the “abuse breeds crime” hypothesis. Logistic regression allows for multivariate analysis of dichotomous dependent variables (Studemund, 1992). The current study uses logistic regression for the “abuse breeds abuse,” “abuse breeds violent crime,” and “abuse breeds a life of crime” hypotheses.

Finally, the current research examines which model best predicts the dependent variable of each of the intergenerational transmission of violence hypotheses. The current study compares the chi-square ( $\chi^2$ ) values of each model. A larger chi-square ( $\chi^2$ ) indicates a better fitting model and, therefore, indicates a “better” discipline measure.

If the current study is indicative of the results of past research, the direction of the effects of physical discipline on the outcome variables should be clear. The presence of physical discipline, the more severe the physical discipline, and the higher the frequency of physical discipline should indicate a higher likelihood that the respondent physically disciplines his own child, has more total arrests, is arrested for a violent crime, and an early onset of criminal activity. The real question is which measures are better predictors of these outcome variables.

## RESULTS

The results are organized into four sections addressing each intergenerational transmission of violence hypothesis that have been outlined above. Each of these sections examines the bivariate relationships between each physical discipline variable and the outcome variable. Then, each of these sections examines the same relationship using the appropriate multivariate method of analysis including control variables. The section then concludes with a comparison of the chi-square ( $\chi^2$ ) values of the discipline models within each hypothesis to determine which discipline measure best predicts that particular outcome variable.

### *Abuse Breeds Abuse*

The descriptive analyses shown in Table 1 indicate that less than half of the sample has physically disciplined their children. To examine the relationship between a continuous variable – such as the combination discipline variables – and a dichotomous dependent variable, the current study divides the continuous independent variable into two groups: below the mean and above the mean. The current study then uses crosstabulations to examine the relationship between the dichotomous groups of the independent variable and the dependent variable.

Bivariate relationships are presented in Table 3 using crosstabulations. As Table 3 indicates, only the “ever physically disciplined” and “severity of physical discipline” relationship to whether the respondent physically disciplined his own child are statistically significant. Over 45% of those respondents who experienced physical discipline as a child physically disciplined their own

children. Conversely, fewer than 14% of those who did *not* experience physical discipline as a child physically disciplined their own children.

(Insert Table 3 about here)

In examining the bivariate relationship between the “severity of discipline” variable and whether the respondent physically disciplined his child, the findings indicate that over one-half of those respondents who experienced *mild* discipline and over 40% of those who experienced *severe* discipline had physically disciplined their children. Conversely, as stated above, less than 14% of those who had not been disciplined as a child had physically disciplined their own children.

This finding is surprising since more respondents who experienced mild physical discipline physically disciplined their children than those who experienced severe physical discipline. This finding indicates that the distinction between “mild” and “severe” physical discipline may not be as clear as previously thought. Mild physical discipline includes spanking. Spanking is used by many parents and may be indicative of “acceptable” parenting practices and, therefore, is not related to the intergenerational transmission of violence.

The effects of experiencing physical discipline as a child on physically disciplining one’s own child would be best understood in the context of multivariate analysis controlling for potentially confounding variables. Because the dependent variable is a dichotomous term – ever physically discipline child or not – the current research runs a logistic regression.



The logistic regression for the “abuse breeds abuse” hypothesis is presented in Table 4. There are five models presented in Table 4. Each model includes one of the physical discipline variables.

(Insert Table 4 about here)

First, only two models – ever discipline and severity of discipline – are statistically significant with respect to predicting whether a respondent physically disciplined his children ( $p < .05$ ). In both of these models, the discipline variables were the only statistically significant variables ( $p < .05$ ). Interestingly, the social and economic stress proxies did not yield a statistically significant effect in these multivariate relationships.

Coefficients from logistic regression models can be calculated into an odds ratio by exponentiating the coefficient. In Model 1, the odds ratio for the ever physically disciplined variable is  $\exp^{(1.717)} = 5.656$ . This exponent value means that the odds of a respondent physically disciplining his children are over 5.5 times greater than if he had not experienced physical discipline as a child. In Model 2, the odds ratio for the mild discipline and severe discipline measures are 6.900 and 4.748, respectively. Therefore, the odds of his physically disciplining his children were close to 7 times greater if he was mildly disciplined as a child than if he was not. If a respondent experienced severe physical discipline, then the odds of physically disciplining his children were 4.7 times greater.

The real question, though, is which physical discipline measure better explains whether a respondent physically disciplines his child. One way to examine which discipline measure is the “best” measure is to compare the values

of the chi-square ( $\chi^2$ ) of each logit model. The better discipline measure should have a larger chi-square ( $\chi^2$ ). Although this type of analysis does not include a significance test, the comparison of chi-square ( $\chi^2$ ) values should give us an initial understanding as to which discipline measure relates closest to the likelihood of the respondent physically disciplining his child.

The results of this comparison are presented in Table 5. The results from Table 5 indicate that the “ever discipline” and the “severity of discipline” models have the highest chi-square ( $\chi^2$ ) values ( $\chi^2 = 17.504$  and  $\chi^2 = 20.553$ , respectively). The other discipline models have substantively lower chi-square ( $\chi^2$ ) values.

(Insert Table 5 about here)

### *Abuse Breeds Crime*

First, the current study examines bivariate relationships between the five physical discipline measures above and the total number of arrests. These bivariate relationships are presented in Table 6. Because the “ever physically disciplined” and the “severity of discipline” measures are categorical, the relationships were performed using comparison of means. The other relationships were performed using correlations because both the dependent variable and the independent variables were continuous.

(Insert Table 6 about here)

Although none of the abuse measures were statistically significant ( $p < .05$ ), the differences in the mean number of arrests were in the expected directions – that is, the physically disciplined group had a higher mean of arrests than the

non-disciplined group. The remaining relationships indicated a similar expected direction.

Examining the combination of variety, frequency, and severity measures of physical discipline, there is a higher correlation for the combination of variety and frequency ( $r = .038$ ) than for the combination of variety and severity ( $r = .006$ ). Therefore, at first glance, the frequency of physical discipline may have more of an impact than the severity of physical discipline.

In order to get a more detailed understanding of the effect of physical discipline on adult criminal behavior, the current study conducted five OLS regressions – one for each discipline measure. The OLS regressions are presented in Table 7. All five models are statistically significant. However, none of the discipline items had significant effects on the dependent variable. Three control variables – age, race, and whether family was on welfare as a child – were all statistically significant in all five models.

(Insert Table 7 about here)

The crux of the current research, though, is to determine which discipline measure is the best at predicting the outcome variable – i.e., number of criminal arrests. Since the method of analysis used for this hypothesis was OLS, the current study examines the unique variance explained. The differences in  $R^2$  of the “abuse breeds crime” models are presented in Table 8. The differences in  $R^2$  indicate variance that is unique to that added variable. Within this hypothesis, there seems to be very little unique variance added when the discipline measures are added. Therefore, in predicting the number of crimes committed, using

controls alone is just as good as adding any of the proposed physical discipline measures.

(Insert Table 8 about here)

### *Abuse Breeds Violent Crime*

Much of the research has focused on the “abuse breeds violent crime” hypothesis. Past research (see, for example, Widom, 1989a) has defined the dependent variable as a dichotomous term – arrested for violent crime or not. Over 66% of the sample had been arrested for a violent crime (see Table 1).

The current study first examines the bivariate relationship between physical discipline and adult violent criminal behavior. Table 9 summarizes the results of these bivariate relationships. The results indicate that the only bivariate relationship that is statistically significant is between the combination of variety, frequency, and severity of physical discipline and whether the respondent committed a violent crime or not ( $p < .05$ ). The results show that nearly three-fourths of those with a composite score of variety, frequency, and severity of physical discipline above the mean had at least one violent arrest. Of those with a composite score below than the mean, 64.1% had at least one violent arrest. The same trends can be found with the other composite scores – variety/frequency of discipline and variety/severity of discipline even though the results were not statistically significant at the 0.05 alpha level,

(Insert Table 9 about here)

A more complete examination of the effect of physical discipline on later violent criminal behavior is conducted through multivariate analyses. Since the

dependent variable is a dichotomous term, the current study examines this multivariate relationship by a logistic regression. The results of the “abuse breeds violent crime” hypothesis are presented in Table 10.

(Insert Table 10 about here)

None of the models presented in Table 10 is statistically significant ( $p < .05$ ). However, two of the discipline measures – variety/frequency and variety/frequency/and severity of physical discipline – were statistically significant ( $p < .05$ ). However, the odds ratios of each of these discipline measures were slightly more than 1 which indicates a small substantive effect. Also, none of the control variables were statistically significant in predicting the likelihood of being arrested for a violent offense.

Table 11 presents the comparison of chi-square ( $\chi^2$ ) values in an attempt to determine which discipline measures is the “best” measure in predicting the likelihood of a respondent to commit a violent offense. All of the chi-square ( $\chi^2$ ) values are fairly similar when comparing between the discipline models. The “ever physically disciplined” model indicates a chi-square ( $\chi^2$ ) value equaling 3.163 – not much higher than a control-only model. The “variety/severity of discipline” model has a chi-square ( $\chi^2$ ) value 3.5 points higher than the “ever physically disciplined” model. The chi-square ( $\chi^2$ ) values of the other combination discipline models and the “severity of discipline” model are a few points higher as indicated in Table 10.

(Insert Table 11 about here)

These findings show that there is not much variation among the chi-square ( $\chi^2$ ) values. However, the “ever physically disciplined” measure seems to be the worst in predicting the likelihood of violent criminal behavior. The other discipline measures do not seem to be any better in predicting the likelihood of violent criminal behavior.

### *Abuse Breeds a Life of Crime*

The final hypothesis that the current study examines is the “abuse breeds a life of crime” hypothesis. As noted above, the current study could not address all of the factors highlighted in the career criminal literature. Therefore, the proxy for the dependent variable to test this hypothesis is the reported age at first involvement in crime. The career criminal literature suggests that those who commit crimes much earlier than most continue to a life of crime. Therefore, the current research examines the impact of abuse measures on whether a respondent was arrested a very early age – before 11 years old. The frequency measures in Table 1 indicate that 21.1% of the sample had a very early age at first involvement.

The bivariate relationship between the physical discipline measures and whether the subject was first criminally involved at an early age or not is presented in Table 12. The bivariate relationships were analyzed using crosstabulations between early onset and discipline. All of the relationships between the discipline measures – except for “ever physically disciplined” – and age at first reported criminal activity are statistically significant ( $p < .05$ ). For example, 30% of those who had a composite score of variety and frequency of

physical discipline above the mean had reported their first criminal involvement before 11 years of age. Conversely, only 16.5% of the respondents who had a composite score below the mean had reported being first involved in crime before 11. The same trend is documented in Table 12 for the other combination discipline measures.

(Insert Table 12 about here)

The current study now examines the multivariate relationships between the discipline measures and the likelihood of early criminal involvement. Again, because the dependent variable is dichotomous – early age at first criminal involvement or not – the multivariate analysis performed is logistic regression. The logistic regression results are presented in Table 13.

(Insert Table 13 about here)

Every model presented in Table 13 is statistically significant ( $p < .05$ ). The three composite discipline measures are statistically significant ( $p < .05$ ) in predicting the likelihood of being involved in crime at an early age. Again, taking the exponent of the unstandardized coefficient in the logistic regression allows the researcher to interpret the odds ratios of obtaining a particular result for the dependent variable. Although the three combination physical discipline measures were statistically significant, the odds for each measure were slightly more than 1. This finding indicates a small effect.

As discussed earlier, one way to determine which of these discipline measures is the “best” measure is to compare the chi-square ( $\chi^2$ ) values across the physical discipline logit models. This comparison is presented in Table 14. The

combination discipline models indicate chi-squares ( $\chi^2$ ) ranging from 50.528 to 50.898 whereas the “severity of discipline” model indicates a chi-square ( $\chi^2$ ) equaling 39.963 and the “ever physically disciplined” model indicates a chi-square ( $\chi^2$ ) equaling 35.540. These findings seem to suggest that the combinations of variety, frequency, and/or severity of physical discipline are better measures in identifying those respondents who engaged in criminal activity early in their life than the simpler discipline measures.

(Insert Table 14 about here)

## **SUMMARY AND DISCUSSION**

The purpose of this study was not only to examine the different intergenerational transmission of violence hypotheses but also to examine which measure of physical discipline best predicted each outcome variable. Several scholars who have examined the intergenerational transmission of violence hypotheses have only performed bivariate relationships merely examining percentages in different groups (see, for example, Kratcoski, 1982; Rivera & Widom, 1990; Weeks & Widom, 1998). Some scholars have examined the relationship between experiencing physical discipline as a child and adult criminal and/or violent behavior (see, for example, Fagan & Wexler, 1987; Widom, 1989a; and Widom & Ames, 1994).

Although multivariate analyses may make a clearer picture of the predictions that physical discipline has on the four proposed outcome variables, one bivariate relationship is worth noting. Within the “abuse breeds abuse” hypothesis, a higher percentage of those respondents who experienced “mild”



physical discipline had physically disciplined their own children than those respondents who experienced “severe” physical discipline. This finding is unexpected since a higher percentage of those who experienced “severe” physical discipline should have physically disciplined their own children than those who experienced “mild” physical discipline.

A possible explanation for this unexpected finding is that physical discipline was incorrectly classified as “mild” or “severe.” For example, spanking possibly need not be categorized as “mild” discipline but as non-discipline. Physical discipline may just be too broad of a term for the intergenerational transmission of violence hypotheses. However, as will later be discussed, one of the problems of this type of research is the difficulty of defining “abuse.”

Multivariate analyses are essential in order to control for variables that might confound the relationship between physical discipline as a child and later behavior in adulthood. Kaufman and Zigler (1987) have suggested that social and economic stress should not be separated from the analyses of the relationship between physical discipline and adult behavior. Multivariate analyses can control for social and economic stress – such as whether family was on welfare and whether both parents raised the subject or not.

For the “abuse breeds abuse” hypothesis, the multivariate analyses indicated interesting results. Only two multivariate models – “ever physically disciplined” and “severity of discipline” – were statistically significant. Within each of these models, the physical discipline variables were the only variables that

were statistically significant. As noted above, it is interesting that the control variables were *not* statistically significant in any of the five models. Therefore, social and economic stress as a child did not have much of an impact on the respondent's use of physical discipline practices on his own children.

Therefore, at first glance, the simpler measures of physical discipline as an independent variable may be better measures. Comparison of the chi-square ( $\chi^2$ ) values confirms this assertion. The simpler measures – “ever physically disciplined” and “severity of physical discipline” – have higher chi-square ( $\chi^2$ ) values than the combination measures. The decision to physically discipline one's own child does not seem to depend on how often and the variety of physical discipline experienced as a child but rather depends on whether the respondent simply experienced physical discipline at all as a child.

For the “abuse breeds crime” hypothesis, the multivariate analyses indicated different findings. Contrary to other studies, the current research examined the dependent variable in the “abuse breeds crime” hypothesis as a continuous variable – that is, total number of non-traffic arrests. Other studies (see, for example, Widom, 1989a) have examined the dependent variable in this hypothesis as a dichotomous term – whether the subject reported *any* non-traffic arrests or not. The current sampling scheme, though, restricted the current study because *all* subjects had been arrested for a non-traffic offense at one time or another.

Even though all of the multivariate models were statistically significant, none of the abuse items were statistically significant within any of these models.

As expected, though, “age” and “non-white” were statistically significant in each of the models. The proxy for economic stress – whether the family was on welfare as a child – was also statistically significant in each of the five models. Also, the comparison of the unique variance added by each of the discipline variables when added to the control only model did not yield strong results.

Past research has examined the “abuse breeds crime” hypothesis differently than the current study. Past research examined how physical discipline related to participation in criminal activity. The current research examined how physical discipline related to the extent of that participation. With a prison sample, the extent of the respondents’ participation in crime may not vary as much as participation in a general sample. “How does physical discipline relate to participation in crime?” may be a qualitatively different question from “how does physical discipline relate to the extent of participation in crime?”

The “abuse breeds violent crime” hypothesis is one of the most popular hypotheses studied in the literature on the intergenerational transmission of violence. Like Kratcoski (1982) and Weeks and Widom (1998), the current study examined the respondent’s participation in violent crime – that is, whether a respondent was arrested for at least one violent offense or not – and not the extent of the respondent’s participation – much like Widom (1989c). Those researchers examining the relationship between physical discipline and violent crime participation found no significant relationships. Widom (1989c), however, found a significant relationship between physical discipline and extent of violent crime participation – that is, number of violent offenses. Unlike previous research,

though, the current study examined different measurements of the physical discipline variable.

In a multivariate analysis, none of the discipline models were statistically significant. Although the overall multivariate model was not statistically significant, two of the physical discipline variables were statistically significant – combination of variety and frequency of physical discipline and combination of variety, frequency, and severity of physical discipline. The comparison of chi-square ( $\chi^2$ ) values indicates the same result. The combination of variety, frequency, and severity of physical discipline model has the highest chi-square ( $\chi^2$ ) value.

These results seem to indicate that a combination of a variety of chronic and severe histories of physical discipline may have more of an impact on one's participation in violent criminal activity than either frequency of physical discipline or severity of discipline alone. However, the combination of a variety and frequency of physical discipline also seems to be relevant in relating discipline to one's participation in adult violent criminal activity.

A hypothesis that is not usually tested is the “abuse breeds a life of crime” hypothesis (see, Rivera & Widom, 1990). The current research does not intend to suggest that physical discipline causes a life of crime. The current research suggests that physical discipline may influence the factors that characterize a career in crime. The data only support analyses of the influences physical discipline has on one factor – early onset of offending.

All of the models in the logistic regression were statistically significant. However, not all physical discipline measures were statistically significant predictors of the likelihood of early age at first offense. Again, only the combined physical discipline measures were statistically significant. Therefore, a more complex measure of physical discipline measure may be more relevant in predicting the likelihood of early age of onset. The comparison of the chi-square ( $\chi^2$ ) values indicates the same results.

On its face, it seems as if variety, frequency, and severity may be interacting with one another. That is, simply examining the effects of the presence of physical discipline on the likelihood of early onset may not be very relevant. A respondent who experiences both a chronic and more severe physical discipline may begin an earlier life of crime than someone who is spanked once or twice.

### *Implications*

The purpose of the current study was to provide the body of literature a more robust set of physical discipline measurements beyond the dichotomous measurement so often used. The current study does not attempt to equate physical discipline with abuse. The current study does attempt to examine physical discipline on a wide range of continuums ranging from no physical discipline to chronic physical discipline and from no physical discipline to more severe physical discipline.

The results of the current study do not imply that an individual who is spanked once or twice will have a higher likelihood of committing violent crimes

as an adult or begin a life of crime earlier than others. The results of the current study do imply, though, that if an individual experiences chronic severe physical discipline, then that individual is at a higher risk of committing more violent crimes and an earlier onset of offending.

### *Limitations*

A limitation of the current research is sampling. The current study only sampled male offenders entering the Nebraska correctional system. The results presented in the current study should not be generalized to non-offenders and to females. Widom (1989a) suggested that the long-term consequences of abuse might be qualitatively different for females than for males. Widom (1989a) suggested that females “are likely to manifest the long-term consequences of abuse and neglect in other, and perhaps more subtle, ways.” (p. 266). Females are more likely to suffer the consequences of abuse inwardly – for example, depression and other emotional problems – rather than directing their aggression outwardly like males (Widom, 1989a).

Another potential problem of the current research is a specificity problem. The definition of abuse in the literature has been inconsistent or non-existent. Many items on the modified Conflict Tactics Scales that were used in the current study were not included in much of the literature – spanking, for example. The current study, therefore, examined “physical discipline” rather than “abuse.” The current study included these items in order to attain a more continuous concept of physical discipline rather than merely abuse or no abuse (see Simons, et al., 1991; Straus, et al., 1980; Weinbach, et al., 1981).

Another specificity problem is in defining “crime.” Most research has defined “crime” dichotomously – either criminal involvement or not. However, in a prison sample, defining “crime” in this way is useless because all subjects within the sample have committed at least one criminal act. Therefore, the current research was required to use a continuous measure of the dependent variable. As discussed above, a dichotomous measure of crime indicates participation in criminal activity. A continuous variable indicates *extent* of that participation. Participation in criminal activity and *extent* of participation in criminal activity may be qualitatively different in a prison sample.

#### *Suggestions for Future Research*

One suggestion for future research is to perform more sophisticated analyses such as factor analyses or even structured equation modeling (SEM). Performing factor analyses would allow the researcher to understand which physical discipline items should be grouped together. With structured equation modeling, the researcher can better understand the relationships between concepts to other concepts. SEM allows the researcher not only to address the relationships between indicators and concepts but also between concepts and other concepts. For example, future research could use SEM to determine whether the concept of severe physical discipline is appropriately related to the indicators as suggested by the current research. Also, a researcher could examine how a physical discipline concept relates to discipline beliefs and/or vice versa.

Another suggestion for future research is to continue to utilize samples that raise the base rate of violent offending. Too often there are either low

numbers of subjects who had committed violent acts – especially in prospective studies – or low numbers of incidents of violent acts per subject. The current data did include self-reported violent incident measures over a three-year period. Future research could benefit from this technique in raising the base rates of violence even more. Examining the violent incidents in this three-year period would allow the researcher to examine violent incidents undetected by the police.

A future concern should also focus on studying not only the differences in methods of physical discipline measures but also those differences between male and female. The current study only sampled men entering the Nebraska correctional system. As suggested above by Widom (1989a), long-term consequences of abuse on females are qualitatively different than on males. Females tend to be affected internally manifesting depression and other emotional problems whereas males tend to act out aggressively as a way to deal with these abusive experiences as a child. Therefore, in examining the differences of the consequences of abuse as a child between males and females, future research should include not only the current outcome variables but also include psychological data.

## **CONCLUSION**

Family support and family discipline can mold a child's behavior that may carry into his adult years. This study analyzed relationships between physical discipline and future adult behavior that were proposed by the intergenerational transmission of violence hypothesis. Depending on the hypothesis tested, different physical discipline measures were more relevant than others.



For the “abuse breeds abuse” hypothesis, the simpler measures – “ever physically disciplined” and “severity of physical discipline” – seemed to be more relevant in predicting the likelihood of the respondent physically disciplining his own children as an adult. The adage “like father like son” seems to hold steadfast here. If the respondent experienced physical discipline – whether chronic or not – he was more likely to physically discipline his own child than if he did not experience physical discipline as a child.

For the “abuse breeds violent crime” and “abuse breeds a life of crime,” the more complex combination measures were more relevant in predicting the outcome variables. Therefore, a respondent who experienced chronic and severe physical discipline is more likely to commit a violent crime and have an early onset of offending. Hypothetically speaking, a respondent who either is spanked many times or who is beaten up a few times is less likely to have committed a violent crime or have had an early start in their offending than a respondent who was beaten up and spanked many times.

Although the current research is an exploration in the impact of different measurements of physical discipline, the road is cleared for more research. The current study found that the effect of abuse is not merely a matter of abuse versus non-abuse. There are important distinctions – such as frequency and severity – that future research must take into account.

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**Table 1 - Dependent and Independent Measures:  
Codes and Frequencies**

<i>Variables</i>	<i>Code</i>	<i>N</i>	<i>%</i>	<i>mean</i>
<i>Dependent Variables</i>				
Ever physically disciplined own child <sup>1</sup>	1 = yes	180	43.5	
	0 = no	234	56.5	
Mean No. of total arrests <sup>2</sup>				17.76
Ever arrested for a violent crime <sup>3</sup>	1 = yes	477	66.3	
	0 = no	242	33.6	
Age at first arrest <sup>4</sup>	1 = less than 11 yrs. old	152	21.1	
	0 = 11 yrs. or older	563	78.2	
<i>Independent Variables</i>				
<u>Abuse Measures</u>				
Ever experience physical discipline	1 = yes	642	89.2	
	0 = no	69	9.6	
Experience mild physical discipline	1 = yes (mild'abuse only)	280	38.9	
	0 = no	431	59.9	
Experience severe physical disciplin	1 = yes	362	50.3	
	0 = no	349	48.5	
Mean of MCTS* by frequency				7.11
Mean of MCTS by severity				4.80
Mean of MCTS by frequency and severity				9.29
<i>Control Measures</i>				
Mean age				30.51
Race	1 = non-white	301	41.8	
	0 = white	416	57.8	
Family ever on welfare	1 = yes	278	38.6	
	0 = no	436	60.6	
Both parents at home	1 = no	317	44.0	
	0 = yes	396	55.0	

<sup>1</sup>used for the "abuse breeds abuse" hypothesis (only includes those who have at least one dependent)

<sup>2</sup>used for the "abuse breeds crime" hypothesis

<sup>3</sup>used for the "abuse breeds violent crime" hypothesis

<sup>4</sup>used for the "abuse breeds a life of crime" hypothesis

\*Modified Conflict Tactics Scales

## Table 2 - Modified Conflict Tactics (MCT) Scales

### *Non-Physical Discipline Items*

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Threaten with a knife or gun  
Shout or yell  
Discuss an issue calmly  
Stomp out of the room or house or yard during a disagreement  
Threaten to hit or throw something

### *Physical Discipline Items - D*

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#### *Mild Physical Discipline - M*

Throw something that could hurt  
Twist arm or hair  
Push or shove  
Grab  
Slap or spank

#### *Severe Physical Discipline - S*

Use a knife or gun  
Punch or hit with something that could hurt  
Choke  
Slam up against a wall  
Beat up  
Burn or scald on purpose  
Kick



**Table 3 - Bivariate Relationships for the "Abuse Breeds Abuse" Hypothesis<sup>1</sup>**

		<i>Ever Discipline Child<sup>2</sup></i>	
		<i>no</i>	<i>yes</i>
Ever Physically Disciplined*	<i>no</i>	86.7% (26)	13.3% (4)
	<i>yes</i>	54.1 (205)	45.9 (174)
Severity of Physical Discipline*	<i>no</i>	86.7 (26)	13.3 (4)
	<i>mild</i>	49.1 (78)	50.9 (81)
	<i>severe</i>	57.7 (127)	42.3 (93)
Variety/Frequency	<i>below mean</i>	57.9 (150)	42.1 (109)
	<i>above mean</i>	54.0 (81)	46.0 (69)
Variety/Severity	<i>below mean</i>	57.0 (139)	43.0 (105)
	<i>above mean</i>	55.9 (95)	44.1 (75)
Variety/Frequency/Severity	<i>below mean</i>	56.4 (146)	43.6 (113)
	<i>above mean</i>	56.7 (85)	43.3 (65)

<sup>1</sup> Used crosstabulations (only includes respondents who had at least one dependent)

<sup>2</sup> No. of cases in parentheses

\*  $p < .05$

**Table 4 - Logistic Regression Results for the "Abuse Breeds Abuse" Hypothesis<sup>1</sup>**

	Model 1*		Model 2*		Model 3		Model 4		Model 5	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Ever Disciplined	1.717*	5.565 (0.553)								
Mild Discipline			1.931*	6.900 (0.566)						
Severe Discipline			1.558*	4.748 (0.560)						
Variety/Frequency					0.007	1.007 (0.015)				
Variety/Severity							0.013	1.013 (0.023)		
Variety/Frequency/Severity									0.001	1.005 (0.010)
Current Age	0.022	1.022	0.020	1.020	0.022	1.022	0.021	1.021	0.022	1.064 (0.012)
Non-white	0.113	1.120	0.090	1.094	0.091	1.095	0.074	1.077	0.081	1.297 (0.211)
Whether family was on welfare	-0.097	0.907	-0.096	0.908	-0.082	0.921	-0.104	0.901	-0.078	1.087 (0.221)
Single parent family	0.314	1.369	0.305	1.357	0.251	1.286	0.253	1.288	0.251	1.269 (0.220)
Constant	-2.758		-2.673		-1.154		-1.122		-1.103	
N of cases	399		399		399		401		399	
Pseudo R <sup>2</sup>	0.043		0.050		0.011		0.011		0.011	

\* p < .05

<sup>1</sup> standard errors are given in parentheses

**Table 5 -- Differences in Chi-Square of Discipline Models  
(Abuse Breeds Abuse)**

	<i>Chi-Square</i>	<i>df</i>	<i>Difference</i>
Controls Only	4.089	4	----
Ever Disciplined	17.504	5	13.415
Severity of Discipline *	20.553	6	16.464
Variety/Frequency	4.448	5	0.359
Variety/Severity	4.397	5	0.308
Variety/Frequency/Severity	4.276	5	0.187

\*"severity of discipline" was defined by two dummy variables (mild; severe)

**Table 6 - Bivariate Relationships for the "Abuse Breeds Crime" Hypothesis <sup>1</sup>**

		<i>Total No. of Arrests</i>		
		<i>Mean</i>	<i>N</i>	<i>r</i>
Ever Disciplined	<i>no</i>	16.45	69	
	<i>yes</i>	18.02	641	
Severity of Discipline	<i>no</i>	16.45	69	
	<i>mild</i>	17.15	279	
	<i>severe</i>	18.69	362	
Variety/Frequency				0.038
Variety/Severity				0.006
Variety/Frequency/Severity				0.029

<sup>1</sup>Used comparison of means and correlations

\*p < .05

**Table 7 - OLS Regression Results for the "Abuse Breeds Crime" Hypothesis<sup>1</sup>**

	Model 1*		Model 2*		Model 3*		Model 4*		Model 5*	
	b	beta	b	beta	b	beta	b	beta	b	beta
Ever Disciplined	0.689 (1.843)	0.014								
Mild Discipline		-0.329 (1.950)		-0.011						
Severe Discipline		1.476 (1.907)		0.050						
Variety/Frequency			0.009 (0.080)		0.043					
Variety/Severity					0.130 (0.124)	0.039				
Variety/Frequency/Severity							0.005 (0.054)		0.036	
Current Age	0.376* (0.058)	0.244	0.380* (0.058)	0.247	0.379* (0.058)	0.246	0.377* (0.058)	0.246	0.379* (0.058)	0.246
Non-white	2.466* (1.124)	0.083	2.575* (1.125)	0.087	2.624* (1.133)	0.088	2.660* (1.132)	0.089	2.597* (1.133)	0.087
Whether family was on welfare	2.615* (1.172)	0.087	2.512* (1.173)	0.084	2.526* (1.174)	0.084	2.608* (1.170)	0.087	2.548* (1.174)	0.085
Single parent family	0.591 (1.142)	0.020	0.605 (1.141)	0.021	0.537 (1.140)	0.018	0.468 (1.137)	0.016	0.544 (1.140)	0.018
Constant	3.758 (2.683)		3.615 (2.681)		3.626 (2.237)		3.683 (2.237)		3.796 (2.225)	
N of cases	695		695		695		697		695	
R <sup>2</sup>	0.068		0.072		0.070		0.070		0.069	

\* p < .05

<sup>1</sup> standard errors are given in parentheses

**Table 8 -- Differences in Explained Variance of the Discipline Models (Abuse Breeds Crime)**

	<i>R</i> <sup>2*</sup>	<i>df</i>	<i>Difference</i>
Controls Only	6.8%	4	----
Ever Disciplined	6.8%	5	0.0%
Severity of Discipline**	7.2%	6	0.4%
Variety/Frequency	7.0%	5	0.2%
Variety/Severity	7.0%	5	0.2%
Variety/Frequency/Severity	6.9%	5	0.1%

\* presented in % to indicate "percent of explained variance of the model"

\*\* "severity of discipline" was defined by two dummy variables (mild; severe)

**Table 9 - Bivariate Relationships for the "Abuse Breeds Violent Crime" Hypothesis <sup>1</sup>**

		<i>Ever Arrested for Violent Offense</i> <sup>2</sup>	
		<i>no</i>	<i>yes</i>
Ever Disciplined	<i>no</i>	31.9% (22)	68.1% (47)
	<i>yes</i>	33.4 (214)	66.6 (427)
Severity of Discipline	<i>no</i>	31.9 (22)	68.1 (47)
	<i>mild</i>	38.0 (106)	62.0 (173)
	<i>severe</i>	29.8 (108)	70.2 (254)
Variety/Frequency	<i>below mean</i>	35.5 (166)	64.5 (301)
	<i>above mean</i>	28.8 (70)	71.2 (173)
Variety/Severity	<i>below mean</i>	35.6 (155)	64.4 (281)
	<i>above mean</i>	30.7 (87)	69.3 (196)
Variety/Frequency/Severity*	<i>below mean</i>	35.9 (166)	64.1 (297)
	<i>above mean</i>	28.3 (70)	71.7 (177)

<sup>1</sup>Used crosstabulations

<sup>2</sup>No. of cases in parentheses

\*  $p < .05$

**Table 10 - Logisitic Regression Results for the "Abuse Breeds Violent Crime" Hypothesis<sup>1</sup>**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Ever Disciplined	-0.194 (0.287)	0.824								
Mild Discipline			-0.405 (0.301)	0.667						
Severe Discipline			-0.020 (0.298)	0.980						
Variety/Frequency					0.033* (0.013)	1.034				
Variety/Severity							0.037 (0.019)	1.038		
Variety/Frequency/Severity									0.025* (0.009)	1.025
Current Age	0.005 (0.009)	1.005	0.006 (0.009)	1.006	0.006 (0.009)	1.006	0.006 (0.009)	1.006	0.006 (0.009)	1.006
Non-white	0.236 (0.171)	1.266	0.262 (0.172)	1.299	0.305 (0.174)	1.357	0.302 (0.173)	1.353	0.312 (0.174)	1.366
Whether family was on welfare	0.059 (0.177)	1.060	0.037 (0.178)	1.038	0.012 (0.179)	1.012	0.042 (0.178)	1.043	0.010 (0.179)	1.010
Single parent family	-0.076 (0.172)	0.927	-0.075 (0.173)	0.928	-0.081 (0.173)	0.922	-0.087 (0.172)	0.917	-0.082 (0.173)	0.922
Constant	0.667 (0.411)		0.634 (0.412)		0.241 (0.339)		0.295 (0.339)		0.242 (0.337)	
N of cases	695		695		695		697		695	
Pseudo R <sup>2</sup>	0.005		0.012		0.014		0.01		0.016	

\* p < .05

<sup>1</sup> standard errors are given in parentheses



**Table 11 -- Differences in Chi-Square of Discipline Models  
(Abuse Breeds Violent Crime)**

	<i>Chi-Square</i>	<i>df</i>	<i>Difference</i>
Controls Only	2.988	4	----
Ever Disciplined	3.163	5	0.175
Severity of Discipline*	8.178	6	5.190
Variety/Frequency	9.776	5	6.788
Variety/Severity	6.746	5	3.758
Variety/Frequency/Severity	10.888	5	7.900

\*"severity of discipline" was defined by two dummy variables (mild; severe)

**Table 12 - Bivariate Relationships for the "Abuse Breeds a Life of Crime" Hypothesis**

		<i>Age at First Crime</i> <sup>2</sup>	
		$\geq 11$	$< 11$
Ever Disciplined	<i>no</i>	82.6% (57)	17.4% (12)
	<i>yes</i>	78.5 (504)	21.5 (138)
Severity of Discipline*	<i>no</i>	82.6 (57)	17.4 (12)
	<i>mild</i>	83.2 (233)	16.8 (47)
	<i>severe</i>	74.9 (271)	25.1 (91)
Variety/Frequency*	<i>below mean</i>	83.5 (391)	16.5 (77)
	<i>above mean</i>	70.0 (170)	30.0 (73)
Variety/Severity*	<i>below mean</i>	83.3 (364)	16.7 (73)
	<i>above mean</i>	71.6 (199)	28.4 (79)
Variety/Frequency/Severity*	<i>below mean</i>	83.0 (385)	17.0 (79)
	<i>above mean</i>	71.3 (176)	28.7 (71)

<sup>1</sup>Used crosstabulations

<sup>2</sup>No. of cases in parentheses

\*  $p < .05$

**Table 13 - Logistic Regression Results for the "Abuse Breeds a Life of Crime" Hypothesis<sup>1</sup>**

	Model 1*		Model 2*		Model 3*		Model 4*		Model 5*	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Ever Disciplined	0.279 (0.341)	1.322								
Mild Discipline			0.023 (0.364)	1.023						
Severe Discipline			0.452 (0.350)	1.572						
Variety/Frequency					0.047* (0.018)	1.053				
Variety/Severity							0.052* (0.013)	1.089		
Variety/Frequency/Severity									0.035* (0.009)	1.035
Current Age	-0.048* (0.012)	0.953	-0.048* (0.012)	0.954	-0.035* (0.019)	0.953	-0.048* (0.012)	0.956	-0.048* (0.012)	0.953
Non-white	-0.499* (0.204)	0.607	-0.470* (0.205)	0.625	-0.371 (0.339)	0.681	-0.384 (0.207)	0.702	-0.383 (0.207)	0.682
Whether family was on welfare	0.399* (0.201)	1.491	0.380 (0.202)	1.462	0.248 (0.321)	1.417	0.348 (0.203)	1.471	0.351 (0.203)	1.421
Single parent family	0.303 (0.204)	1.354	0.305 (0.204)	1.357	0.967* (0.377)	1.314	0.273 (0.205)	1.332	0.276 (0.205)	1.318
Constant	-0.298 (0.495)		-0.318 (0.496)		-0.461 (0.412)		-0.461 (0.412)		-0.423 (0.410)	
N of cases	695		695		695		695		695	
Pseudo R <sup>2</sup>	0.05		0.056		0.071		0.032		0.07	

\* p < .05

<sup>1</sup> standard errors are given in parentheses

**Table 14 -- Differences in Chi-Square of Discipline Models  
(Abuse Breeds a Life of Crime)**

	<i>Chi-Square</i>	<i>df</i>	<i>Difference</i>
Controls Only	33.514	4	----
Ever Disciplined	35.540	5	2.026
Severity of Discipline*	39.963	6	6.449
Variety/Frequency	50.898	5	17.384
Variety/Severity	50.714	5	17.200
Variety/Frequency/Severity	50.528	5	17.014

\*"severity of discipline" was defined by two dummy variables (mild; severe)