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Publisher: Routledge

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Journal of Child & Adolescent Trauma

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/wcat20>

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Published online: 20 Nov 2013.

To cite this article: Caroline B. R. Evans & David L. Burton (2013) Five Types of Child Maltreatment and Subsequent Delinquency: Physical Neglect as the Most Significant Predictor, *Journal of Child & Adolescent Trauma*, 6:4, 231-245, DOI: [10.1080/19361521.2013.837567](https://doi.org/10.1080/19361521.2013.837567)

To link to this article: <http://dx.doi.org/10.1080/19361521.2013.837567>

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Outcomes of Child Maltreatment and Trauma

Five Types of Child Maltreatment and Subsequent Delinquency: Physical Neglect as the Most Significant Predictor

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Past researchers have often reported that childhood and adolescent maltreatment increases the likelihood of, or is related to, juvenile criminality. However, research examining how specific types of maltreatment (physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect) relate to later delinquent offense (violent crime, nonviolent crime, status offending, property offending) is minimal. The aim of this study was to augment and expand upon this scant literature. One hundred and sixty one male juvenile delinquents held in six residential treatment facilities in a Midwestern state, were the subjects of this study. Each participant filled out the Childhood Trauma Questionnaire (CTQ) and the Self-Reported Delinquency measure (SRD) in addition to demographic information. We found that physical neglect is the most significant predictor of violent crime, nonviolent crime, property offending, and status offending. Implications are discussed.

Keywords trauma, abuse, neglect, juvenile delinquency, adolescence

Juvenile delinquency contributes significantly to the crime problem in the United States (Snyder & Sickmund, 2006) and every year about 2.4 million youths are arrested, accounting for 17% of annual arrests (Abram et al., 2004). In 2008, youth accounted for 16% of violent crime arrests and 1 in 4 arrests for robbery, burglary, larceny-theft, and motor vehicle theft (Puzzanchera, 2009). There are many factors that predispose children to become juvenile offenders. Among these, maltreatment has often been cited (Ireland, Smith, & Thornberry, 2002; Maschi, Bradley, & Morken, 2008; Stewart, Livingston, & Dennison, 2008). Diverse types of maltreatment including physical abuse (Dembo, Schmeidler, & Childs, 2007; Egeland, Yates, Appleyard, & van Dulmen, 2002; Kaufman & Widom, 1999; Lansford et al., 2007; Mersky & Reynolds, 2007; Paperny & Deisher, 1983; Widom & Maxfield, 1996), sexual abuse (Dembo, Williams, Wothke, Schmeidler, & Brown, 1992; Dembo et al., 2007), and neglect (Kaufman & Widom, 1999; Kumpfer & Alvarado, 1998; Mersky & Reynolds, 2007; Paperny & Deisher, 1983; Widom & Maxfield, 1996) have

Received June 28, 2011; revised December 23, 2011; accepted February 2, 2012.

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been studied in relationship to delinquency. Overall, maltreatment has been found to lead to increased levels of status offenses (Zingraff, Leiter, Myers, & Johnson, 1993), violent crime, and nonviolent crime (Mersky & Reynolds, 2007). Preliminary research (Maschi, 2006; Mersky & Reynolds, 2007; Widom & Maxfield, 1996; Zingraff et al., 1993) indicates that different types of maltreatment effect victims differently and result in distinct patterns of delinquent offending.

Effects of Type of Maltreatment on Delinquency

In terms of the effect of physical abuse on subsequent delinquency, researchers have reported slightly conflicting results. Some researchers found that children who suffer from physical abuse are significantly more likely than control subjects to commit violent crimes (Mersky & Reynolds, 2007; Widom & Maxfield, 1996) and nonviolent crimes (Mersky & Reynolds, 2007). However, one group of researchers found that abused children were less likely than their nonabused siblings and peers to commit later aggressive crimes (Gutierrez & Reich, 1981). Another group of researchers found that the significant correlation between physical abuse and later violent crime was insignificant when the frequency of maltreatment was added to the statistical analysis (Zingraff et al., 1993). In Widom's well-known longitudinal studies, abused children were not found to be more likely to commit delinquent property crimes; however, children who suffered from both abuse and neglect were significantly more likely than controls to be arrested for delinquent property crimes (Widom & Ames, 1994).

The effects of emotional abuse on children and adolescents are understudied (Yates & Wekerle, 2009) and few researchers have looked directly at how emotional abuse affects types of subsequent delinquent crime. Plattner et al. (2007) found that high levels of emotional abuse resulted in increased rates of negative emotions, especially anger. Yet, another group of researchers found the opposite (Famularo, Kinscherff, Fenton, & Bolduc, 1990). It seems plausible that negative emotions could lead to an increase in delinquent offending and Agnew's (1992, 2001) strain theory further explains this connection. Strain theories initially focused on how the inability to achieve a desired goal resulted in delinquency (Hollist, Hughes, & Schaible, 2009) and the authors of General Strain Theory (GST; Agnew, 1992; 2001) expanded this concept to include the mediating role of negative emotions. According to GST, life stressors increase the presence of negative emotions, which can result in an increase in crime (Agnew, 1992). The combination of negative stimuli (such as maltreatment) and the accompanying negative emotions, may account for the fact that maltreated children become delinquent. One group of researchers (Hollist et al., 2009) tested the accuracy of GST and found that negative emotions contributed to delinquent behavior. When these negative emotions were controlled for, there was a decrease in the effect that maltreatment had on delinquency. As predicted by GST, Hollist et al. (2009) found that negative emotions served to enhance the maltreatment delinquency connection.

In terms of sexual abuse, one researcher found that children who suffered from sexual abuse have a decreased likelihood of being arrested for property offenses (Maschi, 2006). Other researchers reported that sexual abuse does not impact rates of subsequent violent crime (Widom & Maxfield, 1996) and sexually abused children go on to commit the lowest number of violent crimes (Widom, 1989; Widom & Maxfield, 1996). However, in one study, sexually abused children committed significantly more status offenses than children who were not sexually abused (Zingraff et al., 1993).

Physical neglect also has a significant impact upon its victims (Widom & Maxfield, 1996), but similarly to other types of maltreatment, findings about the effects vary. For example, researchers found there was no significant difference between abused and neglected children and rates of later violent and nonviolent crime (Mersky & Reynolds, 2007; Widom & Maxfield, 1996). Zingraff et al. (1993) found a significant increase in the likelihood of arrest for violent crime, property crime, and status offense because of neglect, which was rendered insignificant when the frequency of maltreatment was introduced to the statistical analysis. Emotional neglect has not yet been evaluated in terms of its relationship to delinquency.

Overall, childhood and adolescent maltreatment increases the likelihood that an individual will commit a delinquent act (Ireland et al., 2002; Maschi et al., 2008; Mersky & Reynolds, 2007); but, according to Zingraff et al. (1993), this connection is weaker than previously supposed. Some researchers (Mersky & Reynolds, 2007; Widom & Maxfield, 1996) found that abuse and neglect are equally powerful in predicting delinquent violent and nonviolent offending. And the combination of abuse and neglect together increases the likelihood of property offending (Widom & Ames, 1994). In contrast, after repeated analysis, other researchers (Zingraff et al., 1993) have rendered the connection between abuse and neglect and violent and nonviolent crimes insignificant.

Many of the researchers discussed previously have only assessed one or two types of maltreatment or one or two types of crime in their samples. Therefore, the research question for this study is: how do various types of childhood maltreatment (physical abuse, emotional abuse, sexual abuse, emotional neglect, and physical neglect) predict diverse types of delinquent crime (total delinquent crime, nonviolent crime, violent crime, status offense, and property crime)?

Method

Participants

It is important to consider the ethical concerns of asking incarcerated minors challenging questions. After human subject review committee approval, individual consents were obtained and confidential data were collected from incarcerated male adolescents in six residential facilities in a Midwestern state. Multipaged pencil and paper surveys were collected from 161 adjudicated male delinquent youth. The data were collected in a small group format in the educational facilities of each residential center. Youth were separated so they could not see each other's responses and finished the surveys in about two hours. Four youth had to have the surveys read to them because of learning difficulties, which was done in private. Youth were solicited in each center, but approximately 20% declined participation. No youth indicated upset or concern after filling out the survey, although facility clinicians were in place to assist participants if requested. Following data collection, two youth talked to clinicians and reported that the surveys led them to discuss their trauma further with staff. No other effects were reported. No data is available on those youth who declined to participate.

The average age of the sample ($N = 161$) was 16.51 years ($SD = 1.23$ years). On average, they were in the 9th grade ($SD = 1.32$ grades). In terms of race, typical for many studies in delinquency, 53.9% of participants selected African American, 33.9% of participants selected Caucasian, 6.0% of participants selected "Other," and 6.2% of participants did not select any option for race.

Many (36.3%) of the youth were raised in single mother families, 28.1% were raised in two parents families, 15% were raised with a mother and a partner, and 10% were raised by grandparents. Fewer than 5% were raised by a single father (4.4%), other relatives (2.5%), father and a partner (1.9%) or, in foster homes (1.9%). Only a small percentage (7.4%) of the youth responded yes to being very poor (little money, food, clothes, heat, etc.) while 2.5% said they did not know. The remaining youth responded that they were not very poor.

Materials

The Childhood Trauma questionnaire (CTQ; Bernstein & Fink, 1998) is a 34-item scale that provides a brief and relatively noninvasive screening of maltreatment in childhood using a 5-point frequency scale ranging from 1 (*never true*) to 5 (*very often true*). Questions include items such as "People in my family hit me so hard that it left me with bruises or marks," "I didn't have enough to eat," and "I believe that I was emotionally abused." This scale has proven reliable, has been validated with an adolescent population (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997), and has been used with delinquent youth (Burton, 2008). As researchers (Zingraff et al., 1993) have reported that frequency seems to be important in assessing maltreatment, a frequency based measure was selected for our study. There are five subscales in the CTQ: Physical Abuse, Emotional Abuse, Sexual Abuse, Physical Neglect, and Emotional Neglect. All of the subscales have acceptable to good internal consistency in this study with Cronbach's alphas on the five CTQ subscales ranging from .73 (*Physical Neglect*) to .91 (*Emotional Neglect*; see Table 1).

Elliot, Huizinga, and Ageton's (1985) often cited measure, the Self-Reported Delinquency measure (SRD), was used to assess the frequency of delinquent offending. The scale has 32 questions using a 7-point frequency scale from 0 (*never*) to 7 (*2-3 times per day*) including questions on diverse crimes ranging from drug use to aggression. This instrument has several subscales including General Delinquency, Property Damage, Public

Table 1
Cronbach's Alpha for the CTQ and SRD scales (sorted by Alpha within instrument)

Scale*	Cronbach's Alpha	Number of items
Childhood trauma questionnaire		
CTQ emotional abuse	.852	5
CTQ emotional neglect	.913	9
CTQ Physical abuse	.899	5
CTQ Physical neglect	.763	9
CTQ Sexual abuse	.778	6
CTQ Total	.890	34
Self-reported delinquency		
SRD nonviolence	.906	24
SRD property damage	.767	3
SRD status	.668	2
SRD violence (without rape)	.628	5
SRD total	.910	32

*Ordered alphabetically.

Disorderly, Felony Assault, Felony Theft, Robbery, Alcohol Use, Drug Use, and Selling Drugs. However, for the purposes of this study, only the General Delinquency and Property Damage subscales were utilized. Other items were recombined to create a Violent Crime subscale (i.e., attacked someone with the idea of seriously hurting or killing that person, was involved in gang fights, had or tried to have sexual relations with someone against their will, hit or threatened to hit one of my parents, hit or threatened to hit my supervisor or another employee, used force or strong arm methods to get money or things from people), a Nonviolent Crime subscale made up of all of the nonviolent items in the measure (e.g., purposely damaged or destroyed property, stole or tried to steal a motor vehicle, stole or tried to steal something worth more than \$100, used pot, hash, marijuana, made obscene telephone call—see measure for the remaining items), and a Status Offense subscale (i.e., use of cigarettes, alcohol). All of the subscales have acceptable to good internal consistency in this study. Cronbach's alphas on the five SRD subscales ranging from .63 (*Violent Crime*) to .91 (*Total Delinquency*; see Table 1).

Socially Desirable Responding

The Millon Adolescent Clinical Inventory (MACI) is based on Millon's theory of patterns in personality (Millon, Millon, & Davis, 1993) and is devised for youth in treatment or in correctional institutions. The measure was normed on 579 adolescents in such facilities, with two smaller cross-validation samples (Millon et al., 1993). Its scales comprise 160 True-False questions, including a validity and three modifying indices that assist with socially desirable responding. Questions that may indicate socially desirable over or under responding include items such as "I always try to do what is proper" and "I have not seen a car in the last 10 years." The MACI was used in the current project to cull out youth with socially desirable or invalid responding profiles. Thereby, data from three juveniles were not used for this study.

Data Analyses

The data were entered using SPSS version 12 and analyzed with SPSS version 15. A series of multiple regressions are used to examine the research question: First the CTQ total score is regressed onto the total delinquency score. This is followed by five hierarchical regressions in which the five separate scales of the CTQ (sexual abuse, physical abuse, emotional abuse, physical neglect and emotional neglect) are regressed onto the total delinquency score, the property damage score, the violent crime score, the nonviolent crime score, and the status offense score to assess the power of the varying types of abuse to predict each type of crime.

Results

The CTQ questions in each type of abuse are not each indicators of the presence of maltreatment. Rather the responses indicate scalar responses to questions that relate to each form of maltreatment such as "I didn't have enough to eat." Therefore we cannot easily offer a count of those who have suffered from each form of maltreatment in a dichotomous or percentile fashion. Raw scale scores are offered in Table 2. For comparison across types of maltreatment we have divided the average total scores by the number of items.

Table 2
Scale descriptive statistics

Scale*	Number of items	Scale score (SD)	Relative score (average score/number of Items)
Childhood trauma questionnaire			
CTQ Emotional neglect	9	16.01 (8.14)	1.78
CTQ Physical neglect	9	14.52 (5.63)	1.61
CTQ Physical abuse	5	7.11 (3.98)	1.42
CTQ Emotional abuse	5	6.62 (3.26)	1.32
CTQ Sexual abuse	6	7.95 (2.70)	1.32
CTQ Total	34	51.97 (17.16)	
Self-reported delinquency			
SRD status	2	4.76 (4.22)	2.38
SRD nonviolence	24	20.67 (21.19)	.86
SRD violence (without rape)	5	2.02 (3.54)	.40
SRD property damage	3	.90 (2.09)	.30
SRD total	32	23.67 (24.14)	

*Sorted by relative score within each measure.

As might be expected, many of the CTQ scales correlate strongly with one another, as do many of the SRD scales. However, in Table 3, small and moderate correlations between trauma and delinquency (emboldened) were also found in the analyses. As illustrated, this is true for all forms of trauma with the exception of emotional neglect.

Regression Analyses

In the first regression, we assessed the CTQ total scale (that is the total frequency of trauma across all types of maltreatment) as a predictor of the SRD total scale (that is the total frequency of delinquency scale across all crimes). The frequency of all types of childhood maltreatment, as indicated by the CTQ total score, significantly predicts 12.1% of the frequency of delinquency ($F = 17.84$ (131), $p = .000$). See Table 4.

In the following regressions, we assessed the diverse types of maltreatment as predictors of diverse types of delinquency. In each analysis we assessed potential multicollinearity. We also considered using poverty as a control variable; but, given that very few youth endorsed severe poverty and the homogeneity of their responses to that question, it was not included in the analysis.

Total Frequency of Delinquency

After ruling out multicollinearity (variance inflation factors [VIFs] did not exceed 2.5), a multivariate analysis regressing the frequency of all five types of trauma (Physical Abuse, Sexual Abuse, Emotional Abuse, Physical Neglect, and Emotional Neglect CTQ scales) onto the SRD Total Delinquency scale, yielded only physical neglect and sexual abuse as significant predictors of the frequency of delinquency ($F = 12.68$ (130) $p = .000$). The equation accounts for 33.5% of the variability in the frequency of delinquency (see Table 5).

Table 3
Subscale correlations

	CTQ emotional abuse	CTQ emotional neglect	CTQ physical abuse	CTQ physical neglect	CTQ sexual abuse	CTQ total	SRD nonviolence	SRD property damage	SRD status	SRD violence (without rape)	SRD total
CTQ emotional abuse	1.000										
CTQ emotional neglect	.385	1.000									
CTQ physical abuse	.751	.262	1.000								
CTQ physical neglect	.505	.347	.488	1.000							
CTQ sexual abuse	.113	.028	.213	.422	1.000						
CTQ total	.172	.738	.009	.000	.399	1.000					
SRD nonviolence	.745	.746	.698	.787	.000	.340	1.000				
SRD property damage	.279	.002	.293	.482	.365	.000	.606	1.000			
SRD status	.001	.979	.001	.000	.000	.321	.000	.244	1.000		
SRD violence (without rape)	.331	.044	.328	.369	.188	.000	.733	.489	.337	1.000	
SRD total	.000	.620	.000	.000	.033	.215	.000	.004	.000	.000	1.000
SRD violence (without rape)	.202	-.045	.216	.323	.212	.013	.692	.000	.337	.770	
SRD total	.021	.611	.013	.000	.015	.297	.000	.000	.000	.001	
SRD violence (without rape)	.151	.083	.180	.451	.344	.001	.993	.000	.701	.770	
SRD total	.085	.345	.093	.000	.000	.340	.000	.000	.000	.001	
SRD total	.276	-.009	.295	.501	.379	.000	.000	.000	.000	.001	
SRD total	.001	.914	.001	.000	.000	.000	.000	.000	.000	.001	

Note. Shaded boxes indicate significant correlations. Bold text indicates small and moderate correlations between trauma and delinquency.

Table 4
Summary of regression analysis for trauma predicting SRD total delinquency score

Variable	B	SE B	β
CTQ total score	.51	.12	.35*

$R^2 = .121.$

* $p < .001.$

Table 5
Summary of multiple regression analysis for type of maltreatment and total delinquency

Variable†	B	SE B	β
Physical neglect	2.13	.45	.46**
Emotional neglect	-.64	.26	-.20*
Sexual abuse	1.74	.78	.19*
Physical abuse	-.35	.74	-.05
Emotional abuse	1.17	.88	.15

† = Variables ordered by p value; $R^2 = .35.$

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

Total Frequency of Property Damage

After ruling out multicollinearity (VIFs did not exceed 2.5), a multivariate analysis regressing the frequency of all five types of trauma onto the SRD Property Damage scale, yielded that only physical neglect is a significant predictor of the frequency of Property Damage ($F = 5.88$ (129) $p = .000$). The equation accounts for 19.2% of the frequency in property damage (see Table 6).

Total Frequency of Violent Crime

After ruling out multicollinearity (VIFs did not exceed 2.5), a multivariate analysis regressing the frequency of all five types of trauma onto a created Violent Crime scale, yielded that only physical neglect is a significant predictor of the frequency of violent crime ($F = 10.05$ (130) $p = .000$). The equation accounts for 28.7% of the frequency in violent crime (see Table 7).

Total Frequency of Nonviolent Crime

After ruling out multicollinearity (VIFs did not exceed 2.5), a multivariate analysis regressing the frequency of all five types of trauma onto a created Nonviolent Crime scale, yielded that physical neglect, emotional neglect, and sexual abuse (in descending order) are significant predictors of the frequency of nonviolent crime ($F = 11.28$ (130) $p = .000$). The equation accounts for 31.1% of the frequency of nonviolent crime (see Table 8).

Table 6
Summary of multiple regression analysis for type of maltreatment and property damage

Variable†	B	SE B	β
Physical neglect	.10	.04	.25*
Emotional abuse	.15	.08	.23
Emotional neglect	-.05	.03	-.17
Sexual abuse	.04	.07	.05
Physical abuse	.03	.07	.06

† = Variables ordered by p value; $R^2 = .21$.

* $p < .05$.

Table 7
Summary of multiple regression analysis for type of maltreatment and violent crime

Variable†	B	SE B	β
Physical neglect	.34	.07	.51*
Sexual abuse	.21	.12	.15
Emotional abuse	-.07	.13	-.06
Physical abuse	-.06	.11	-.06
Emotional neglect	-.01	.04	-.02

† = Variables ordered by p value; $R^2 = .287$.

* $p < .001$.

Total Frequency of Status Offenses

After ruling out multicollinearity (VIFs did not exceed 2.5), a multivariate analysis regressing the frequency of all five types of trauma (Physical Abuse, Sexual Abuse, Emotional Abuse, Physical Neglect, and Emotional Neglect CTQ scales) onto a created Status Offense scale yielded that physical neglect and emotional neglect significantly predict the frequency of status offenses ($F = .44$ (130) $p = .001$). The equation accounts for 14.9% of the frequency of status offenses (see Table 9).

Table 8
Summary of multiple regression analysis for type of maltreatment and nonviolent crime

Variable†	B	SE B	β
Physical neglect	1.72	.40	.42**
Emotional neglect	-.59	.24	-.21*
Sexual abuse	1.55	.69	.19*
Emotional abuse	1.23	.79	.18
Physical abuse	-.33	.66	-.06

† = Variables ordered by p value; $R^2 = .311$.

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

Table 9
Summary of multiple regression analysis for type of maltreatment and status offending

Variable†	B	SE B	β
Physical neglect	.23	.09	.28**
Emotional neglect	-.12	.05	-.22*
Emotional abuse	.22	.17	.17
Sexual abuse	.14	.15	.09
Physical abuse	-.03	.15	-.03

† = Variables ordered by p value; $R^2 = .15$.

* $p < .05$. ** $p < .01$.

Discussion

This study supports past researcher's findings (Ireland et al., 2002; Maschi et al., 2008; Stewart et al., 2008) and found that overall the frequency of childhood maltreatment predicts the frequency of later delinquent offending. In other words, the more frequently a child suffers maltreatment the more frequently he will commit delinquent offenses. In this sample, the frequency of maltreatment accounts for 12% to 35% of the frequency of later delinquent offending, findings which range below and above the 14% that Zingraff et al. (1993), found and certainly lower than the 50% to 75% cited in Zingraff's study (1993). Maltreatment significantly predicts future delinquent offending, but we found that physical neglect has the most significant effect for both total delinquency and for each type of delinquency.

In various multiple regressions, physical neglect most significantly increased an individual's likelihood of committing later property damage, status offending, and violent crime. Physical neglect, emotional neglect, and sexual abuse (respectively) had a significant impact on later nonviolent offending. This supports past researchers (Mersky & Reynolds, 2007; Widom & Ames, 1994; Widom & Maxfield, 1996; Zingraff et al., 1993) who reported that neglect leads to increases in property crime, violent crime, nonviolent crime, and status offending. However, in this study we found that it was specifically *physical* neglect that accounts for the increase in these forms of delinquency. Previous researchers have looked at neglect as a whole and have not separated out physical and emotional neglect. We noted that emotional neglect was not correlated with status offenses or nonviolent crime; yet, was predictive of a small portion of the variance of each offense type. This is probably because of emotional neglect's correlation to physical neglect—although not creating an issue with multicollinearity by standard forms of evaluation, this is evidently the case.

Previous researchers have found that neglect and physical abuse are equally significant predictors of later delinquent crime (Mersky & Reynolds, 2007; Widom & Maxfield, 1996); however, our results indicate that physical neglect is more influential than previously thought. It is interesting and somewhat counterintuitive that physical neglect led to more violent behavior than physical abuse. Perhaps victims who were physically abused purposefully avoided committing violent crimes in order to avoid inflicting the pain they suffered onto another person. It is also plausible that betrayal trauma theory (BTT; Freyd, Klest, & Deprince, 2010) might explain why physical abuse does not lead to violent crime. According to BTT, when a victim is perpetrated by someone he/she depends upon (such as a child who is abused by his/her caretaker) the victim is often conflicted about whether

to acknowledge the trauma/betrayal and avoid the perpetrator or ignore the betrayal (and trauma-related reminders) in order to maintain close to the perpetrator. In cases of interfamilial abuse, the victim may forget the betrayal, given the utility of remaining unaware of the abuse because he/she may be motivated to preserve the attachment with the perpetrator (the level of memory impairment would depend on the nature and characteristics of the victim–perpetrator relationship). The more egregious the betrayal, the more likely it is that the victim will keep the trauma out of his/her consciousness. Physical abuse is more violent than neglect, so perhaps victims of child abuse are more likely to prevent this trauma from entering his/her consciousness than victims of neglect and therefore do not act out aggressively. Why then, did physical neglect have such a strong effect on its victims in terms of later delinquent offending?

According to the U.S. Department of Health and Human Services Administration on Children, Youth and Families 2010 report, neglect is the most prevalent form of maltreatment. In 2009, 78.3% of maltreatment reports were neglect, 17.8% were physical abuse, and 9.5% were reports of sexual abuse (U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth, and Families, 2010).

Adolescents who were neglected as children are more aggressive, disruptive, and oppositional than their nonmaltreated peers, although less so than their abused peers (Manly, Kim, Rogosch, & Cicchetti, 2001). This suggests that the effects of neglect may change with age. Based on Manly et al.'s (2001) study, one would expect abused children to become more violent in adolescence than neglected children; however, this was not the case in our study. In school-aged adolescents, neglect that occurs alone or in combination with physical or sexual abuse, results in the lowest level of academic achievement (Eckenrode, Laird, & Doris, 1993). These social and academic limitations of neglected children may impair their decision making, rendering them more likely to engage in delinquent activity. It is also possible that physical neglect may indicate a lack of parental supervision, which gives children and adolescents opportunities to engage in criminal activities. According to Agnew (2001), parental rejection leads to an increase in crime. It seems plausible that parental rejection and a lack of parental supervision may co-occur.

It is important to note one unexpected finding. In this study, all of the results illustrate that an increase in childhood maltreatment results in greater frequency of diverse forms of criminality with the exception of emotional neglect. The more a subject was emotionally neglected the less frequently he committed nonviolent crime. Emotional neglect may be seen as a form of parental withdrawal or lack of emotional support and connection, potentially resulting in low self-esteem and poor self-confidence. This may create an inability to form many or strong peer relationships. Nonviolent crime is often committed with other youth (Monahan, Steinberg, & Cauffman, 2009) and the more frequently emotionally neglected youth may have been more isolative and been somewhat protected from this type of crime. Alternatively, nonviolent crime may be seen as a method of getting social attention (Leschied, Chiodo, Nowicki, & Rodger, 2008) amongst peers and from adult figures. Perhaps emotional neglect creates learned helplessness (Peterson, Maier, & Seligman, 1995) and these youth do not see a way to obtain attention via nonviolent crime.

Clinical and Research Implications

The results of this study indicate that types of maltreatment effect adolescents differently and can result in distinct patterns of delinquent behavior. Therefore, interventions used to

treat youth victims of maltreatment, should be carefully tailored to target specific types of maltreatment (Edwards & Lutzker, 2008). Future researchers should begin to examine what specific interventions work most effectively to combat the effects of each type of maltreatment.

This research helps highlight the potential importance of early detection and intervention in cases of child maltreatment, especially neglect, in order to try and prevent future delinquency. Because physical neglect is not as violent or physically damaging as physical abuse, it may often be overlooked because of a lack of physical manifestations (Hildyard & Wolfe, 2002). Defining neglect is also difficult because there is little consensus on a definition (Harrington, Black, Starr, & Dubowitz, 1998). It is therefore important that better screening tools and a universal definition be established. With improved detection, early interventions can be implemented, which will lessen the long term effects of neglect and might ultimately serve to decrease later delinquent offending. Interventions for neglect and related trauma may include family therapies such as Multisystemic Treatment (Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010). Parent Education (Barth, 2009), cognitive behavioral treatment of the symptoms of neglect (Child Welfare Information Gateway, 2007), and behaviorally based treatment such as social skill training or cognitive behavioral treatment for related attention deficit disorder for deficits created by neglect.

Future research might include longitudinal data collection, better measures of socioeconomic status, nonincarcerated delinquents, and measures of potential alternate and control variables. As is typically desired, a larger sample size would be ideal. Finally, an interaction study with a larger sample is needed to assess how the various forms of maltreatment may affect each other in relationship to criminality (this was assessed in the current study in preliminary analysis and no interaction effects were found, but a larger sample size or different measures may affect the analyses).

Limitations

Although this study had significant and important results, there were some limitations. First, the sample was limited as participants were males held in treatment facilities in the Midwest. Therefore, the results of this study cannot be extended to females, males in community treatment or other geographic regions. It is important to consider how the results may have been influenced by the fact that participants were held in residential treatment facilities. It is likely that the youth in this study had more severe criminal records than noninstitutionalized youth, which may have affected the results. If the sample had included delinquent adolescents who suffered from maltreatment, but were not in residential treatment facilities, perhaps the results would have been different. In addition, 20% of those solicited declined participation—the declining youth may have been more or less severe in our variables and we had no way to explore these differences.

Second, although the Cronbach's Alphas for the subscales of delinquent crime were mostly adequate, the status offending and violent crime scale were .67 and .63 which means they did not measure status offending and violent crime as reliability as they could have, which may have impacted our results. Third, even though we controlled for social desirability, it is possible that some participants were not totally truthful when filling out their surveys or simply could not accurately remember their pasts. Fourth, it is possible that factors other than maltreatment influenced violent behavior and the results. For example, genetics play a role in violence (Caspi et al., 2002) and it was certainly beyond the scope of this study to examine genetics. Therefore, when interpreting the results, it is important

to keep extraneous and unmeasured variables in mind. Fifth, the measure of socioeconomic status in the study (a simple “how poor are you” with a three-level scale) offered very little variability so we could not use it as a control variable in the study and participants were all equally poor. Finally, this is a relatively small sample limiting generalizability.

Conclusions

Although maltreatment, especially neglect, plays a significant part in juvenile offending, it does not explain the entire picture for this sample. In this study, maltreatment accounted for 12% to 35% of the frequency of delinquency, which means maltreatment is only a small piece of the puzzle. In order to treat juvenile offenders and decrease offense rates, discovering the remaining pieces of the puzzle will be important. However, knowing the significant impact neglect has on children and adolescents should spur policy makers and mental health providers to focus efforts on detecting and preventing neglect and other forms of child maltreatment. This research should be used to help researchers as they strive to better understand the causes of juvenile delinquency.

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