


Original Investigation

A Prospective Examination of Whether Childhood Sexual Abuse Predicts Subsequent Sexual Offending

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IMPORTANCE Childhood sexual abuse has been assumed to increase the risk for sexual offending. However, despite methodological limitations of prior research, public policies and clinical practice have been based on this assumption.

OBJECTIVE To empirically examine the commonly held belief that sexually abused children grow up to become sexual offenders and specialize in sex crimes.

DESIGN, SETTING, AND PARTICIPANTS This prospective cohort study and archival records check included cases and control individuals originally from a metropolitan county in the Midwest. Children with substantiated cases of physical and sexual abuse and neglect (aged 0-11 years) were matched with children without such histories on the basis of age, sex, race/ethnicity, and approximate family social class (908 cases and 667 control individuals). Both groups were followed up into adulthood (mean age, 51 years). The court cases were from 1967 to 1971; the follow-up extended to 2013.

MAIN OUTCOMES AND MEASURES Criminal history information was collected from federal and state law enforcement agency records at 3 points in time and from state sex offender registries.

RESULTS Overall, individuals with histories of childhood abuse and neglect were at increased risk for being arrested for a sex crime compared with control individuals (adjusted odds ratio [AOR], 2.17; 95% CI, 1.38-3.40), controlling for age, sex, and race/ethnicity. Specifically, individuals with histories of physical abuse (AOR, 2.06; 95% CI, 1.02-4.16) and neglect (AOR, 2.21; 95% CI, 1.39-3.51) were at significantly increased risk for arrest for sex offenses, whereas for sexual abuse, the AOR (2.13; 95% CI, 0.83-5.47) did not reach significance. Physically abused and neglected males (not females) were at increased risk and physically abused males also had a higher mean number of sex crime arrests compared with control individuals. The results did not provide support for sex crime specialization.

CONCLUSIONS AND RELEVANCE The widespread belief that sexually abused children are uniquely at risk to become sex offenders was not supported by prospective empirical evidence. These new findings suggest that early intervention programs should target children with histories of physical abuse and neglect. They also indicate that existing policies and practices specifically directed at future risk for sex offending for sexually abused children may warrant reevaluation.

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Childhood sexual abuse is a significant problem with serious social, psychological, and physical health consequences.^{1,2} Among these, childhood sexual abuse is believed to increase the risk for subsequent sexual offending.³ Numerous reports have described sexual abuse in the backgrounds of adult sex offenders who were either incarcerated or in treatment programs⁴⁻¹⁴ and juvenile sexual offenders.¹⁵⁻²⁰ However, the cross-sectional design of these studies introduced ambiguity into the meaning of these findings because retrospective data do not provide evidence of prospective risk. A 2004 Centers for Disease Control and Prevention report recommended priority for research that takes an upstream approach to the problem of sexual violence by attempting to determine factors that predict violence before it occurs.²¹

To our knowledge, few prospective studies have followed up childhood sexual abuse survivors into adolescence or adulthood to date. An earlier report from the US Government Accountability Office²² concluded that research findings on the relationship between childhood sexual abuse and later sexual offending were inconsistent and inconclusive. Many existing studies also lacked a control group, making it difficult to evaluate the extent to which estimates are higher than the general population. One exception was a prospective study of individuals with documented cases of childhood abuse and neglect and matched control individuals who were followed up with a search of criminal arrest records through a mean age of 32 years.²³ Those who experienced childhood sexual abuse, physical abuse, and neglect were at risk for crime and delinquency including sexual offending. Survivors of childhood sexual abuse were at most risk for prostitution, and none had arrests for incest, child molesting, public indecency, or contributing to the delinquency of a minor.²³ Another study followed up male childhood sexual abuse survivors (mean age, 11 years) for a period of 7 to 19 years and found that 11.6% had subsequently committed sexual offenses, concluding that the “risk of child victims of sexual abuse becoming abusers themselves is lower than previously thought.”^{24(p474)}

However, these 2 prospective studies^{23,24} were limited because of the ages of the study samples. The US Department of Justice reported that 4 of 10 sexual assaults are committed by individuals 30 years or older.²⁵ Statistics from the 2009 Federal Bureau of Investigation Uniform Crime Reports showed that individuals 30 years and older accounted for 48.7% of arrests for sex offenses.²⁶ Thus, it is possible that the 2 earlier studies showing little or no association between childhood sexual abuse and risk for arrest for sexual offenses may have underestimated the extent of sexual crimes because sexual offenders are older on average than other kinds of offenders when first convicted.²⁷ On the other hand, some research suggests that individuals who were sexually abused commit their first sex crime at a younger age than individuals without such histories.^{17,28}

Sex offenders are also assumed to be persistent offenders who specialize in sex crimes.²⁹ Empirical evidence has been mixed; however, current research suggests that sex offenders are not specialists.^{30,31} Instead, the convicted sex offender is characterized by a more general pattern of antisocial behavior.³²

The current study was designed to improve on earlier research with a longer-term follow-up into the adulthood (mean age, 51 years) of individuals with documented cases of childhood sexual and physical abuse and neglect and matched control individuals. We hypothesized that compared with physically abused and neglected children and matched control individuals, those with documented histories of childhood sexual abuse are at greater risk for being arrested for a sex crime and committing a larger number of sex crimes, are younger at their first arrest for a sex crime, and are more likely to specialize in sex crimes.

Methods

This research used data from a prospective cohort design study in which abused and neglected children were matched with nonabused and non-neglected children and followed up into adulthood.³³ Notable features of the design include an unambiguous operationalization of child abuse and/or neglect (substantiated court cases); a prospective design; separate abused and neglected groups; a large sample; a comparison group matched as closely as possible on age, sex, race/ethnicity, and approximate social class background; and assessment of the long-term consequences of abuse and/or neglect beyond adolescence and into adulthood.

The prospective nature of the study disentangled the effects of childhood experience of abuse from other potential confounding effects. Because of the matching procedure, participants were assumed to differ only in the risk factor, that is, having experienced childhood neglect or sexual or physical abuse. Because it is obviously not possible to randomly assign participants to groups, the assumption of group equivalency is an approximation. The comparison group may also differ from the abused and neglected individuals on other variables nested within abuse or neglect.

Cases were drawn from the records of county juvenile and adult criminal courts in a Midwest metropolitan area during the years 1967 to 1971 ($N = 908$). To avoid potential problems with ambiguity in the direction of causality and ensure that the temporal sequence was clear, cases were restricted to children younger than 12 years at the time of the abuse or neglect incident. Physical abuse cases included bruises, welts, burns, abrasions, lacerations, wounds, cuts, bone and skull fractures, and other evidence of physical injury. Sexual abuse charges varied from felony sexual assault to fondling or touching in an obscene manner, rape, sodomy, and incest. Neglect cases reflected a judgment that the parents' deficiencies in child care were beyond those found acceptable by community and professional standards at the time and represented extreme failure to provide adequate food, clothing, shelter, and medical attention.

A critical element of this design was the establishment of a comparison or control group, matched on the basis of sex, age, race/ethnicity, and approximate family socioeconomic status during the period under study. This matching is important because it is theoretically plausible that any relationship between child maltreatment and later outcomes is con-

founded or explained by social class differences. Children who were younger than school age at the time of the abuse or neglect were matched with children of the same sex, race/ethnicity, date of birth (± 1 week), and hospital of birth through county birth record information. For school-aged children, more than 100 elementary schools' records were searched to find matches of the same sex, race/ethnicity, date of birth (± 6 months), and same class in same elementary school during 1967-1971. Overall, there were 667 matches (73.7%) for the abused and neglected children. Records were checked and no members of the control group were reported to the courts for abuse or neglect, although it is possible that some may have experienced unreported abuse or neglect.

The City University of New York and Federal Bureau of Investigation institutional review boards approved the procedures involved in this study and waived participant consent.

Participants

A total of 1575 individuals (908 abuse/neglect cases and 667 matched control individuals) were included in this study. Approximately half the sample was female (51.0%) and 66.3% were white, non-Hispanic. The mean (SD) age of the sample in 2013 was 51.33 (3.56) years (range, 42-61 years).

Measures

Criminal histories were compiled from searches conducted during 1987-1988³⁴ and 1994.³⁵ In addition, an updated search of arrest records was conducted in 2013 using information from the Federal Bureau of Investigation's National Crime Information Center and state law enforcement agency in the Midwestern state where the records of childhood maltreatment were initially collected. This new information was combined with prior records to create a comprehensive criminal history record for each person. Sex offenses included statutory rape, child molestation, enticing a child for indecent purposes, sexual battery, criminal deviant conduct, solicitation of a minor, child pornography, vicarious sexual gratification, sexual misconduct with a minor, incest, indecent exposure, peeping, rape, sexual torture, lewd conduct, sodomy (until *Lawrence v Texas* [2003],

sodomy was considered an offense in many jurisdictions), and aggravated sodomy. Specialization was defined as having more than 50% of the crimes on a person's criminal record representing a sex crime.^{30,36}

The Dru Sjodin National Sex Offender Public Website (<http://www.nsopr.gov>) was also searched for information from all 50 state sex offender registries. Information was recorded for state of residence and offense commitment, type of sex offense, date of conviction, sentence length, victim age or sex, classification level of offender, and registration compliance status.

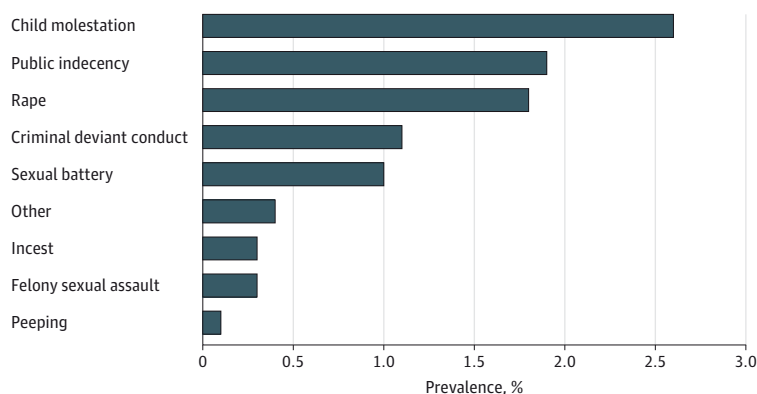
Statistical Analyses

All variables and scales were examined for outliers and skewness. Differences between the control and abuse/neglect groups overall and specific types (sexual and physical abuse and neglect) were examined. Logistic regressions were used for dichotomous dependent variables (an arrest), whereas ordinary least squares regressions were used with continuous variables (number of offenses). When count variables were significantly skewed, generalized Poisson regressions were used. The Kaplan-Meier product-limit technique was used to evaluate the survival function at the age at onset of sex offending for uncensored cases and age at time of Federal Bureau of Investigation record review for censored cases. The log-rank statistic (Mantel-Cox) was used to test for differences between the survival functions, weighing all cases equally. All analyses controlled for age, sex, and race/ethnicity. Because of sex differences in the rates of offending,³⁴ analyses were repeated for men and women separately. The number of participants varied slightly in each analysis owing to missing data. Statistical significance was set at 0.05 and IBM SPSS Statistics (version 21) was used.

Results

There was a total of 105 cases (6.67% of the overall sample) who had been charged with a sex offense, most of whom were men ($n = 88$; 83.81%). **Figure 1** shows the distribution of the types of sex offenses.

Figure 1. Distribution of Sex Offenses for the Entire Sample



The percentages do not add up to 6.7% (the prevalence in the overall sample) because some individuals were arrested for more than 1 type of crime.

Table 1. Prevalence of Individuals Arrested for Sex Crimes Overall and by Type of Childhood Abuse and Neglect^a

Variable	Total (N = 1575)		Males (n = 776)		Females (n = 799)	
	No. (%)	AOR (95% CI)	No. (%)	AOR (95% CI)	No. (%)	AOR (95% CI)
Total	1575 (6.7)		776 (11.3)		799 (2.1)	
Control	667 (4.5)	1 [Reference]	334 (7.5)	1 [Reference]	333 (1.5)	1 [Reference]
Abuse/neglect	908 (8.3)	2.17 (1.38-3.40)	442 (14.3)	2.26 (1.37-3.71)	466 (2.6)	1.82 (0.63-5.23)
Neglect	697 (9.0)	2.21 (1.39-3.51)	374 (14.4)	2.28 (1.37-3.79)	323 (2.8)	1.94 (0.64-5.86)
Physical abuse	160 (8.1)	2.06 (1.02-4.16)	88 (13.6)	2.26 (1.07-4.81)	72 (1.4)	1.07 (0.12-9.58)
Sexual abuse	153 (4.6)	2.13 (0.83-5.47)	24 (12.5)	1.94 (0.52-7.24)	129 (3.1)	2.50 (0.62-10.03)

Abbreviation: AOR, adjusted odds ratio.

^a Binary logistic regressions controlled for age, race/ethnicity, and sex for

analyses using the total sample and controlled for age and race/ethnicity for analyses using male and female samples.

Table 2. Number of Arrests and Age at First Sex Crime Arrest Overall and by Type of Childhood Abuse and Neglect

Variable	Total (N = 1575)		Males (n = 776)		Females (n = 799)	
	Mean (SD)	P Value	Mean (SD)	P Value	Mean (SD)	P Value
No. of sex crime arrests ^a						
Total	1.84 (1.29)		1.97 (1.37)		1.18 (0.39)	
Control (reference)	1.67 (1.09)		1.76 (1.16)		1.20 (0.45)	
Abuse/neglect	1.91 (1.37)	.46	2.05 (1.44)	.42	1.17 (0.39)	.75
Neglect	1.78 (1.28)	.88	1.87 (1.35)	.88	1.22 (0.44)	.75
Physical abuse	3.00 (1.83)	.006	3.17 (1.80)	.003	NT ^b	
Sexual abuse	1.43 (0.79)	.75	2.00 (1.00)	.39	NT ^b	
Age at first arrest for sex crime, y ^c						
Total	27.39 (9.13)		26.80 (8.80)		30.47 (10.42)	
Control (reference)	27.41 (9.63)		27.54 (9.40)		26.78 (11.90)	
Abuse/neglect	27.39 (8.99)	.79	26.51 (8.61)	.53	32.01 (9.89)	.79
Neglect	27.69 (9.02)	.90	27.19 (8.67)	.74	30.73 (11.00)	.87
Physical abuse	22.32 (6.50)	.13	21.67 (6.33)	.08	NT ^b	
Sexual abuse	28.66 (10.80)	.80	26.54 (11.22)	.99	30.24 (11.89)	.35

Abbreviation: NT, not tested.

^a For mean number of arrests for sex crimes, Wald χ^2 results were calculated with a Poisson distribution in a generalized linear model, controlling for age, race/ethnicity, and sex.^b Too few people with an arrest.^c For age at onset, analysis of covariance, controlling for age, race/ethnicity, and sex, was used.

Childhood Sexual Abuse and Subsequent Arrests for a Sex Crime

Overall, abused and neglected children were significantly more likely to be arrested for a sex crime compared with the matched control individuals ($\chi^2_1 = 8.747$; $P = .003$). **Table 1** shows that child abuse and neglect increased the risk for being arrested for a sex crime (adjusted odds ratio [AOR], 2.17; 95% CI, 1.38-3.40). Specifically, individuals with histories of physical abuse (AOR, 2.06; 95% CI, 1.02-4.16) and neglect (AOR, 2.21; 95% CI, 1.39-3.51) were at increased risk for arrest for sex offenses, whereas for childhood sexual abuse, the AOR did not reach significance (AOR, 2.13; 95% CI, 0.83-5.47).

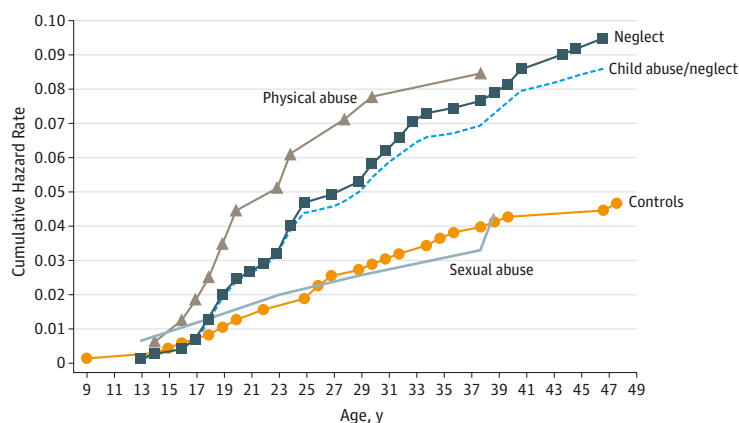
For males, child maltreatment (AOR, 2.26; 95% CI, 1.37-3.71), physical abuse (AOR, 2.26; 95% CI, 1.07-4.81), and neglect (AOR, 2.28; 95% CI, 1.37-3.79) increased the risk for arrest for a sex crime, whereas sexual abuse did not reach significance (AOR, 1.94; 95% CI, 0.52-7.24). For females, child abuse/neglect overall and specific types of abuse or neglect did not increase the risk for arrest for sex crimes.

The number of arrests for sex offenses did not differ significantly between the abuse/neglect (mean [SD], 1.91 [1.37]) and control groups (mean [SD], 1.67 [1.09]) (Wald $\chi^2_1 = 0.536$; $P = .464$; **Table 2**). However, individuals with histories of childhood physical abuse ($\beta = 0.42$; $P = .004$) and males ($\beta = 0.49$; $P = .001$) had a larger number of arrests for sex crimes.

Childhood Sexual Abuse and Age at First Arrest for a Sex Crime

The mean age at first arrest for a sex crime ranged from early 20s to early 30s. There were no significant differences among the groups (**Table 2**). Inspection of the pattern of age at onset of these arrests (**Figure 2**) shows that the curves for the abuse/neglect (log-rank statistic = 8.737; $df = 1$; $P = .003$) and neglect groups (log-rank statistic = 11.113; $df = 1$; $P = .001$) were significantly different from the control individuals, with a trend for physical abuse (log-rank statistic = 3.673; $df = 1$; $P = .06$). The sexual abuse group did not differ from the control group (log-rank statistic < .001; $df = 1$; $P = .99$).

Figure 2. Cox Proportional Hazard Model Showing the Age at Onset of First Sex Crime Arrest by Group



The Kaplan-Meier product-limit technique was used to generate age-at-onset curves to evaluate the survival function at the age of onset for sex offending for uncensored cases (ie, those who had been arrested for a sex offense) and age at time of criminal history review for censored cases (ie, those who had not been charged with a sex offense). Cumulative hazard function shows the probability of sex offending at each age given not having been charged with a sex offense up to that age.

Among males, the cumulative hazard rate curves for abuse/neglect overall (log-rank statistic = 8.735; $df = 1$; $P = .003$) and neglect (log-rank statistic = 8.650; $df = 1$; $P = .003$) differed from male control individuals. There was a nonsignificant trend for physically abused males ($P = .06$), but not for sexually abused males ($P = .37$). For females, there were no significant differences.

Childhood Sexual Abuse and Specialization in Sex Crimes

Of those in the sample with arrests for sex crimes, few (6.67%) had records that included only sex offenses. Only 10 (9.52%) of the sex offenders met the criteria for specialization, and 3 of these were control individuals.

Discussion

The current study examined a number of commonly held beliefs about the consequences of childhood sexual abuse and, specifically, the likelihood that these child victims will grow up to become sexual offenders and specialize in sex offending. Using a prospective design, we found that individuals with histories of childhood abuse and neglect were at increased risk for being arrested for a sex crime compared with individuals without such histories, and this effect was primarily in those with histories of childhood physical abuse and neglect and for males. This pattern of offending is consistent with earlier findings that childhood survivors of physical abuse and neglect were at increased risk for being arrested for a violent crime and reinforces the notion that sex crimes are also violent crimes.

Contrary to what is commonly believed, individuals with a history of childhood sexual abuse were not at unique risk to be arrested for a sex crime compared with physically abused or neglected individuals or matched control individuals. Because of the relatively small number of sexually abused youth in this sample, these results need to be interpreted with caution. The lack of significant findings for sexual abuse survivors may be the result of inadequate statistical power. However, power is determined by sample and effect sizes. Many studies with small samples report signifi-

cant findings because the effect is substantial. In 2 previous studies from this sample of abused and neglected children, individuals with childhood sexual abuse histories were at significantly increased risk for sexually transmitted diseases in adulthood³⁷ and having same-sex sexual partners,³⁸ suggesting that substantial effects can be detected even with this relatively small subset of individuals with histories of childhood sexual abuse.

In terms of age at onset of sexual offending, we did not find that those who had experienced childhood sexual abuse were arrested for their first sexual offense at an earlier age than control individuals. In contrast, we found that maltreated children in general and those who had been neglected had a higher probability of being arrested at any age. Lastly, our results showed that individuals who were arrested for sex crimes were not likely to specialize in sex offending, regardless of maltreatment status. Most of these individuals had arrests for other types of offenses, suggesting that the sex offenses committed were part of a larger pattern of violent and antisocial behavior, particularly among individuals with histories of childhood physical abuse and neglect.

Interpreting the findings from this study should take into account the study's limitations as well as strengths. One key advantage was the prospective longitudinal follow-up that permitted an estimation of future risk compared with retrospective designs. Although the use of official records of child abuse and neglect is also an advantage because of the lack of ambiguity about the maltreatment experience, this strategy means that only cases of abuse and neglect that came to the attention of authorities were included. The sample is weighted heavily toward the lower end of the socioeconomic spectrum; therefore, the results may not generalize to consequences of abuse and neglect for children in middle- and upper-income families. These findings are also not generalizable to abused and neglected children adopted in infancy or early childhood because these cases were excluded. Furthermore, because the sample represents children who grew up in the late 1960s and early 1970s, this may raise concerns about the relevance of these cases to current cases. However, the cases studied here are quite similar to current cases being processed by the child

protection system and the courts. One difference is that these children were not provided with extensive services or treatment options as available today and, thereby, the results of this study represent the natural history of the development of abused and neglected children.

Another possible concern is the extent to which these children moved out of state, making the rates reported here conservatively biased. However, because National Crime Information Center records reflect arrests for crimes across the United States and all state registries were searched, this should mitigate against this problem. It also might be argued that official report data underestimate actual sex offense rates because sex offenses are underreported. Although this is a concern, as suggested by Carpentier et al,³⁹ underreporting may have less impact if data are collected across a long follow-up period (in this case, more than 30 years). If a person was engaging in sex offending, the probability that at least 1 event would be detected increases with the more crimes committed. Relatedly, these individuals were involved in official child protective service cases as children and often came from families with extensive involvement with child welfare and justice systems, increasing their general risk for arrest owing to surveillance bias.

We searched the Dru Sjodin National Sex Offender Public Website for information about sex offenders and found a serious underestimation of the prevalence of sex offenses (a total

of 9 individuals listed on all state registries). Given such a major discrepancy between the public registry data and official criminal history records, our findings support previous recommendations that researchers should consider the use of the public registry data with caution.⁴⁰

Conclusions

This study represents a long-term and comprehensive assessment of the extent to which sexually abused children become sex offenders and compares them to physically abused and neglected and nonmaltreated children. These findings show that physically abused and neglected children are at increased risk for being arrested for sex crimes and should receive effective interventions to avert these negative consequences. These results do not provide support for the common belief that being a survivor of childhood sexual abuse carries with it a unique increase in the risk for becoming a sex offender, contrary to some public policies and administrative practices of some jurisdictions where children may be stigmatized, placed in restrictive settings, or barred from schools. Perhaps it is time for a Government Accountability Office report or Institute of Medicine panel study to reevaluate public policies and treatment efforts that have been implemented based on common assumptions.

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