CHILD ABUSE AND NEGLECT
Diagnosis, Treatment, and Evidence

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EPIDEMIOLOGY OF SEXUAL ABUSE

Vincent J. Palusci, MD, MS

HISTORY

As with other forms of child maltreatment, child sexual abuse (CSA) has likely occurred since the dawn of human history. But unlike physical abuse, neglect and psychological maltreatment, CSA has been shrouded by the cloak of social taboo surrounding sexual contact with children and human sexuality in general. This made determining the true number of CSA cases difficult, leading physicians and other scientists to believe it was an uncommon problem. In the 1970s in the United States, reports of CSA grew dramatically as the social changes associated with the women's movement revealed the plight of sexually victimized children. Early counts of CSA rose dramatically from a few thousand, to 44,700 annually in 1979.[1] CSA now consistently comprises 10% to 15% of child maltreatment (CM) reports in the United States and Canada.[2,3] Similar patterns have been noted in other countries, with initial reports of CSA being low or "nonexistent" in number, and more recently increasing case identification and reporting associated with social acceptance and improved professional response. Despite improved identification and reporting, a large proportion of CSA cases are thought to remain hidden from public view or investigation while real numbers appear to be declining in the United States.

TERMINOLOGY

A variety of sources reports aspects of the incidence and prevalence of child sexual victimization. Unfortunately, varying definitions of the type of sexual contact (direct or indirect, penetrative or nonpenetrative, harm or endangerment) and what constitutes a "child" can make assessment problematic.[4] *Rape*, which is often reported by law enforcement and criminal justice systems, has been generally defined as forceful, penetrative contact, and is further specified in state penal codes. *Sexual assault* refers to a broader collection of acts, including fondling and other nonpenetrating acts, and also is further refined in state penal codes. Other terms imply the relationship of the offender to the victim. *Incest* refers to sexual contact between family members, which is sometimes limited to immediate family but in other contexts can extend to fifth degree relationships (second cousin, once removed). *Sexual exploitation* generally refers to acts without sexual contact, such as having children pose for sexually explicit photographic or video images, having them witness sexual acts, or by adults exposing themselves to children inappropriately for the sexual gratification of the adult. Thus a broad definition of *child sexual abuse* has been taken as the "... involvement of dependent, developmentally immature children and adolescents in sexual activities that they do not fully comprehend, to which they are unable to give informed consent, or that violate the social taboos of family roles.[5]" This has been modified for practical application to "... an act of commission, including intrusion or penetration, molestation with genital contact, or other forms of sexual acts in which children are used to provide sexual gratification for the perpetrator. This type of abuse also includes acts such as sexual exploitation and child pornography.[6]"

Case Finding

David Finkelhor[7] has noted that "because sexual abuse is usually a hidden offense, there are no statistics on how many cases actually occur each year. Official statistics include only the cases that are disclosed to child protection agencies or to law enforcement." There are several ways, however, that CSA can be identified. Cases are most often reported by witnesses or disclosed by the child. These reports are transmitted to law enforcement and child welfare agencies (child protective services [CPS] in the United States) as "suspected cases" until an investigation identifies credible evidence to make a determination that the child is a victim and/or that a crime has occurred. To identify more cases, screening has been proposed to find victims in the general pediatric population.[8] Screening procedures have been devised which use information from the parents, characteristics of the child, interview or physical examination findings, and other case factors. However, while some case characteristics have been found to be more predictive of CSA determination, there is no single "test" that identifies a child as a CSA victim.[9,10] That determination usually requires a finding by an investigatory agency, and the variability of these findings leads to variations in case findings in official statistics.

Incidence

Incidence refers to the number of CSA cases that occur each year, whereas prevalence is defined as the number of people who, at a given time, have been the victim of at least one act of CSA during their lifetime. These two approaches, measuring different aspects of the occurrence of CSA, come from different types of analyses and often appear to reach different conclusions about the extent of the problem. One can sometimes estimate the population prevalence of a condition from annual incidence statistics.

There are three principle sources of data on the incidence of CSA in the United States. Traditional criminal justice agencies collect information about a variety of crimes in the United States, including violent crimes such as homicide and rape, and property crimes. The U.S. Bureau of Justice reports that while violent crime decreased 26.3% from 1996 to 2005, the rate increased 1.3% from 2004 to 2005.[11] Although the National Crime Victimization Survey estimated there were 197,000 incidents of forcible rape and 110,000 other incidents of sexual assault of victims ages 12 and older in the United States, only one third were estimated to have been reported to law enforcement agencies in 1996. In the Federal Bureau of Investigation's Uniform Crime Reports in 12 U.S. states during 1991-1996, two thirds of the 60,991 sexual assault victims were less than 18 years of age.[11] Juvenile victims accounted for 75% or more of incidents of fondling, sodomy, and forcible assault with an object, but only 46% of rapes. Most offenders were male (96%) and older than 18 years (76.8%), but only 34% were family members, suggesting that only a relatively small proportion of the cases in this dataset are true CSA cases as defined by child protective services agencies and collected in the National Child Abuse and Neglect Data System.

The National Child Abuse and Neglect Data System (NCANDS) contains aggregate and case-level data on child abuse reports received by state agencies in the United States.[2] Data were first collected in the late 1980s from a small number of states, but there are now more than 45 states and territories providing information annually about the outcomes of child abuse reports, types of maltreatment, child and family factors, and services being provided. National estimates of the overall numbers of CM victims (substantiated or indicated reports) and victims identified with the major types of CM (physical abuse, sexual abuse, neglect, medical neglect, and psychological maltreatment) are provided in Figure 3-1. In NCANDS, the number of CM victims rose, fell, and then stabilized at approximately 900,000 annually since the year 2000, with rises in neglect and declines in physical abuse. The number of CSA victims, while rising during the late 1980s, actually declined during much of the 1990s and early into the twenty-first century. Cases declined from a peak of 144,760 cases in 1991 to 79,640 in 2006. CSA incidence rates also declined from 2.2 per 1000 children in 1990 to 1.1 per 1000 in 2006 (Figure 3-2).

National incidence surveys are an additional source of information. The Canadian Incidence Study (CIS) reported that 11% of confirmed CM reports were for sexual abuse, affecting 0.93 children per 1000 in 1998.[3] In the United States, the National Incidence Studies of child abuse and neglect (NIS) have provided separate, periodic estimates of a growing number of sentinel professionals in a representative group of U.S. counties to determine the actual number of CM victims.[12] In 1993, NIS-3 sampled more than 5600 professionals in 842 agencies serving 42 counties to identify children in any or all of the agencies under two standards: The harm standard (relatively stringent in that it generally requires that an act or omission result in demonstrable harm to be classified as abuse or neglect) and the endangerment standard (which allows children who were not yet harmed by maltreatment to be counted if the CM was confirmed by CPS or identified as endangerment by professionals outside

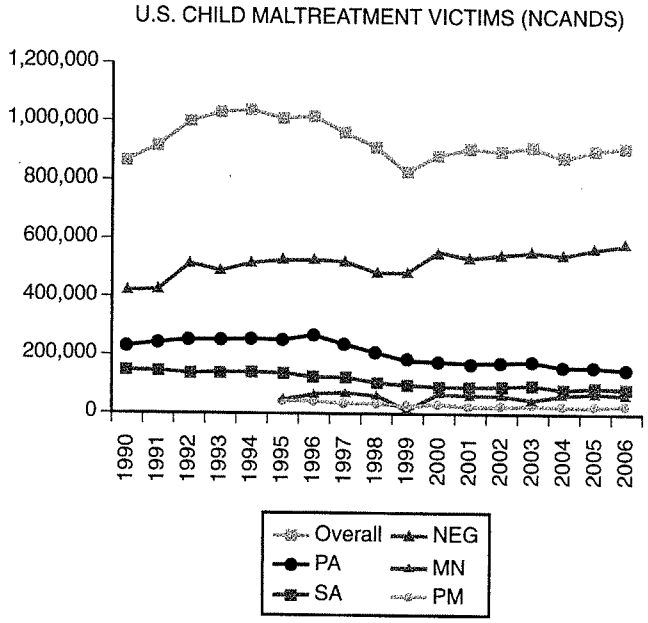

FIGURE 3-1 U.S. Child Maltreatment Victims, from the National Child Abuse and Neglect Data System. *PA,* Physical abuse; *SA,* Sexual abuse; *NEG,* Neglect; *MN,* Medical neglect; *PM,* Psychologic maltreatment. *(From U.S. Department of Health and Human Services: Child Maltreatment 1990-2006: Reports from the states to the national child abuse and neglect data system. U.S. Government Printing Office, Washington, DC, 1992-2008.)*

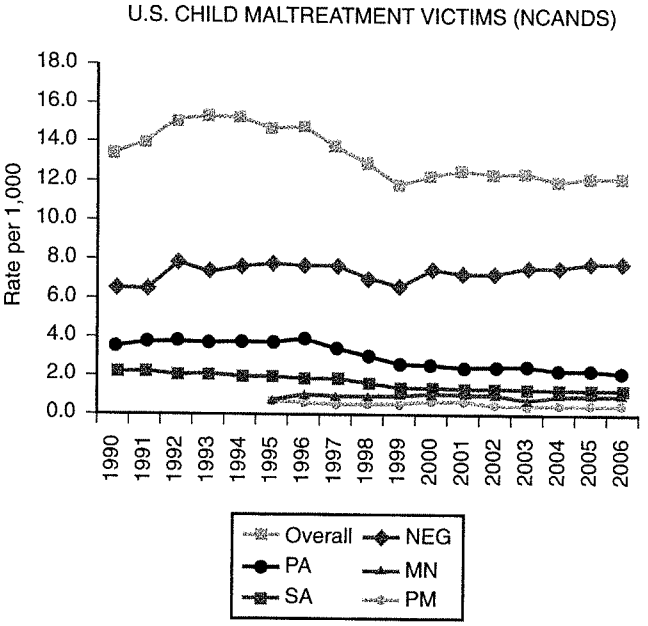

FIGURE 3-2 U.S. Child Maltreatment Victims, Rate per 1,000. *PA,* Physical abuse; *SA,* Sexual abuse; *NEG,* Neglect; *MN,* Medical neglect; *PM,* Psychologic maltreatment. *(From U.S. Department of Health and Human Services: Child Maltreatment 1990-2006: Reports from the states to the national child abuse and neglect data system. U.S. Government Printing Office, Washington, DC, 1992-2008.)*

CPS, either by their parents or other adults). It was found that there was a two thirds increase in the overall number of CM victims since the previous study (NIS-2) in 1986. Sexual abuse nearly doubled during this time period, rising to an estimated 217,700 cases under the "harm standard" and 338,900 cases under the "endangerment standard" in

1993. Differences in these estimates from those reported by NCANDS are thought to be explained by: (1) The fact that NCANDS reports victims that have been investigated and determined to include CSA and do not include unsubstantiated or unfounded cases; (2) NIS includes cases identified by community professionals at schools and hospitals, but which have not been reported to CPS; (3) NIS includes cases under the "endangerment standard," which do not meet CPS criteria for CSA case finding: and, (4) some cases are never revealed during the child's lifetime. In one analysis, the true number of CSA cases was thought to be closer to NIS estimates.[13] NIS-4 was conducted in 2006 and results are expected in 2009.

Prevalence

There are many studies which report the prevalence of CSA. Prospective designs may be more accurate than official CPS reports, but many prevalence studies are retrospective surveys in special populations at increased risk for CSA, suggesting potential biases might overestimate the true prevalence.[14,15] Early small studies reported prevalence rates as low as 3% for males and 12% for females, but with increasing social recognition and acceptance and improved survey techniques, rates of 25% or higher have been consistently identified. Prevalence studies have historically varied greatly in their definition of CSA and in their methods,[7] but they also likely include cases that have not been reported in prospective incidence studies, creating an apparent disparity in the numbers of cases. It is estimated, for example, that less than one third of all CSA cases are reflected in current incidence figures, mostly because cases are not disclosed to authorities. Thus prevalence studies can offer an opportunity to "capture" more cases than are officially reported.

In the selected sample of studies presented (Table 3-1), rates range from 1% in a population-based study in North and South Carolina to over 66% among pregnant adolescents in Washington.[16-29] These studies have been completed over a wide span of years (1988 through 2002) and have wide variations in the self-reported rates of CSA based on locality, sampling technique (convenience vs. population), victim gender, age, type of sexual contact (CSA vs. rape vs. unwanted sexual contact), condition of interest (medical vs. psychological), or criminal justice status (incarceration). Women with pregnancy and men with sexually transmitted infections (consequences of sexual activity) had higher lifetime prevalence of CSA. University students, incarcerated men, and those with injection drug use also had greater rates. This does not mean that these populations are more likely to be abused; rather, it implies that a history of CSA, when obtained by retrospective self-report, is more likely to be found in groups with certain medical, psychological, and social problems.

In contrast, meta-analyses and studies with national samples offer potentially more accurate CSA estimates for the general population (Table 3-2).[3,30-36] For example, the National Family Violence Survey in 1985 reported that 27% of adult women and 16% of adult men reported sexual contact or sexual abuse during childhood, but their relationship to the offender (a key element of CSA) was not specified.[30] Others later reported rates from as low as 4.5% to as high as 37%, varying by location and methodology.[3] A meta-analysis[32] of 59 studies from 1974-1995 noted that there were wide variations in definitions but that, in aggregate, college students reported rates of 16% for CSA with "close" family members and 35% for total CSA with "close" and "wider" family. These rates were 33% higher than the national studies used for comparison, but wide ranges of results were obtained depending on the sexual acts included in their definition.

International studies offer a window into other cultures and their social acceptance and reporting of CSA (Table 3-3).[37-46] Early reports from professionals in countries associated with the United Kingdom noted lower rates (3 per 1000), while later reports have rates similar to those in the United States The Canadian Incidence Study mentioned previously also showed similar rates. Reports from Asia, while limited, show smaller (but increasing) numbers. Other than CIS, these studies have not included national samples and should not be interpreted as representing true population prevalence estimates, especially when done with special populations.

WHY CSA IS DECLINING

Despite the variability, it does appear that overall CSA numbers and rates in the United States are declining (Figures 3-1 and 3-2). A variety of explanations have been offered.[47-49] In a survey of CPS state administrators in 43 U.S. states, Jones et al[47] note a 39% decline in annual incidence based on NCANDS data during 1992-1999. Increased evidentiary requirements, increased caseworker caution because of new legal rights for caregivers, and increasing limitations on the types of cases that are accepted to be investigated are given as potential causes, and the potential effects of prevention programs, increased prosecution, and public awareness campaigns. Some of these potential causes have also been associated with CSA declines outside of the United States.[50] Finkelhor and Jones[49] note that CSA substantiation by CPS declined 49% in the United States from 1990 to 2004, as did other family violence and crimes against children. Using four data sources (NCANDS, state CPS data, the National Crime Victimization Survey conducted by the U.S. Census, and the Minnesota student survey), Finkelhor[48] noted that data provided by CPS agencies offered little evidence that the decline was a result of the investigation decisions by CPS. Evidence was mixed that a social "backlash" had affected reporting. Finkelhor concluded that a significant proportion of the decline could reflect a real decrease in the incidence of CSA. While initial reports of this decline were met with skepticism, these declines in official reports paralleled declines in self-reports during the same period. And while physical abuse reports also declined, reports of neglect and other CM did not. While a general decline in crime has likely contributed to a decline in CSA, so too has a pattern of improved social conditions, economic prosperity, and prevention programs during the 1990s. Even more likely, "new agents of social control" and significantly increased rates of incarceration of offenders have played a pivotal role. Changing social norms and practices, psychopharmacology, and treatment for families may have also contributed to the decline. Unfortunately, the relative contributions of these factors to the decline have not been fully elucidated, and economic downturns and

Table 3-1 Selected CSA Prevalence Studies and Risk Factors in Special Populations

Study	Year Done	Population	Prevalence	Risk Factors*
Russell et al[16]	1978	930 adult women, San Francisco	38% (before age 18 yr)	
Boyer et al[17]	1988-1990	535 pregnant adolescents, Washington	66.2%	
Holmes[18]	1992	95 HIV- positive adult men	20%	
Ompad et al[19]	1997-1999	2143 injection drug users, 18-30 yr, five U.S. cities	14.3% (before age 18 yr)	Younger age injection drug use
Littleton et al[20]	1999-2000	1428 women, family planning clinics, 18-40 yr, Texas	19% (forced sex)	European women
Aspelmeier et al[21]	2000-2001	324 university undergraduates, females	37.7%	Protective: Attachment security in peer and parents relations
Van Gerko et al[22]	2000-2002	299 adult women with eating disorder	28.8%	
Harlow et al[23]	2000-2003	125 women with vulvodynia	18.4% (11.2% controls)	More vulvodynia with CSA
Trent et al[24]	2000	1698, 19-20 yr, Baltimore	16%	Female > male
Whetten et al[25]	2001-2003	611 HIV- positive adults, Deep South, U.S.	¼ lifetime prevalence; 25% before age 13 yr	Females, nonheterosexual men; Alcoholic, depressed parents; DV
Johnson et al[26]	2001	100 men, county jail, Texas	59% (before puberty)	90% female perpetrators
Edwards et al[27]	2002	8667 adults, California	21.6%	
Theodore et al[28]	2002	1435, North and South Carolina	10.5/1,000 (1.05%)	Female (10×), adolescents
Senn et al[29]	2005	871 adults, STD Clinic, Rochester, NY, U.S.	51%	Minority race, less than high school education

*Odds or risk ratio.
STD, Sexually transmitted disease.

changes in other conditions and programs may portend a rebound in CSA.

Recurrence

CM recurrence has been studied to measure program effectiveness and to identify risk factors in cases which can be addressed to prevent further harm. A wide range of recurrence rates are reported (1%-66%) based on the type of maltreatment and whether re-reports or substantiated reports are used. Several studies have identified program, child, family, and services factors which affect subsequent maltreatment.[51-54] In general, factors that increase the likelihood that children will be reabused include younger aged children, children with more severe maltreatment, disabled children, white race, multiple CM types, multiple prior CM victimization, families with emotional problems, family abuse alcohol, and families with other violence histories.

Data regarding CSA recurrence are limited. In a longitudinal survey of 1467 sexually victimized children in 2002-2003, 39% were revictimized by the second year, with the odds of recurrence at 6.9, higher than property crime, assault, or other maltreatment.[54] My own analysis of NCANDS data for 2000-2004 has identified a CM resubstantiation rate of 10% within 2 years of the first confirmed CSA report, with over one third of the new confirmed reports being CSA. Factors associated with an increased risk of CSA recurrence were family housing problems or other family violence; the only services associated with decreased recurrence were counseling, mental health, and juvenile court petition.

Risk and Protective Factors

In addition to incidence and prevalence, epidemiological studies can also identify risk and protective factors, which

Table 3-2 Selected CSA Prevalence Studies with National Samples

Study	Year Done	Population	Prevalence	Risk Factors*
Finkelhor et al[30]	1985	2626 adults, U.S.	27% women, 16% men	Unhappy homes, single parents, West, inadequate sex education
Briere et al[31]		1442 adults, national sample, U.S.	23.3%	Females
Rind et al[32]	Meta-analysis	13,704 males, 21,999 females; college students	17% (3%-37%) females; 27% (8%-71%) males	Family environment factors
Adams et al[33]	1990-1992	4264, age 15-54 yr, U.S., national sample	7.4%	Female > male
Vogeltanz et al[34]	1991	1099 women, national sample, U.S.	21%-32%	Parental drinking, paternal rejection, single parents
Hussey et al[35]	2001-2002	15,197, national sample, U.S.	4.5%	Females (1.2), nonwhite race (1.4-2.0), parent education <high school (1.5), income <$15,000 (1.83), South (1.36)
Finkelhor et al[36]	2002-2003	2030 children, ages 2-17 yr, national sample, U.S.	8.2% (any sexual victimization)	Females, teens; poverty and other victimization (rape)

*Odds or risk ratio.

Table 3-3 Selected International CSA Prevalence Studies

Study	Year Done	Population	Prevalence	Risk Factors*
Mrazek et al[37]	1977-1978	1599 professionals, London, UK	3 per 1000	Female > male, family disturbances
May-Chahal et al[38]	1998-1999	2869, age 18-24 yr, UK	19%; 10% contact, 6% noncontact	Females, middle class
Dunne et al[39]	2000	1784, self-report, age 18-59 yr, Australia	32%	Females (2×), older women
Luo et al[40]	1999-2000	1994, China, adult reports	4.2%	Male > female, highest in age 20-29 yr
Senior et al[41]	1991-1992	10,641 adult women, SW England, UK	18.2% (early age)	Protective: white, high social support
Chen et al[42]	2002-2003	2300 students, 4 schools, survey, China	13.6%	Females (1.6)
Trocmé et al (CIS)[3]	2003	14,200 sample, Canada	National estimate: 17,321 (2.67/1000)	
Jirapramukpitak et al[43]	2005	202, age 16-25 yr, Bangkok, Thailand	5.8% (sexual penetration)	
Fanslow et al[44]	2005	2855 women, age 18-64 yr, 2 regions, New Zealand	23.5%/28.2%	Maori > European, rural > urban
Gladstone et al[45]	2004	125 depressed adult women, Australia	27.2%	More physical and other CM
McCrann et al[46]	2006	487, university students, Tanzania	27.7%	Poverty, superstition

*Odds or risk ratio.

can be addressed to reduce occurrence of CSA (see Tables 3-1 to 3-3). Females and certain race, origin, and age groups appear consistently to have elevated risk for CSA,[2,3,29,55] but these are not case characteristics that are easily modified (e.g., we would not want to reduce the number of girls to reduce CSA). Some factors, such as poverty[35,55] and single parent households,[30,34] are very difficult to address, and in many poor families with a single parent head of the household, no CSA occurs. We are then left with several factors such as alcohol use,[34] domestic violence,[25] less than high school education,[29] and mental illness,[25] which, if they could be reduced or prevented, could reduce the incidence (and therefore the lifetime prevalence) of CSA. And while up to half of sexually or physically abused adolescents have been found to be "resilient" or resistant to the effects of these adverse experiences,[56] further reductions could occur by increasing protective factors such as attachment security and social supports.[21,41,57] Few studies address the role of society in increasing the propensity for CSA, but some work has suggested we can identify particular neighborhoods for targeted prevention.[58] Interestingly, a lack of CSA education was found to be a risk factor for CSA in one study; this clearly could be addressed by currently available programs.[30,59] Unfortunately, most epidemiological studies fail to provide the proportion of CSA in the population that could be prevented by reducing a particular risk factor (the population attributable risk fraction, or PAR_f) or the specific type of intervention that could be used.

STRENGTH OF THE EVIDENCE AND DIRECTIONS FOR FUTURE RESEARCH

While several improvements have been suggested,[60] the National Child Abuse and Neglect Data System now includes report information from most U.S. states and territories, and the National Incidence Studies have identified numbers of CSA cases and risk factors supported by other independent research. However, current research has not identified the relative contribution of risk and protective factors to the occurrence or recurrence of CSA, and some of the factors identified vary among the populations studied. Other than in Canada, the full extent of CSA in other countries is just beginning to be understood. By increasing the size and representativeness of future incidence and prevalence samples, we will come to better understand the true proportion of our population affected by CSA.

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