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Understanding the Scope of Child Sexual Abuse: Challenges and Opportunities

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Abstract

The enormous individual, familial, and societal burden of child sexual abuse has underscored the need to address the problem from a public health framework. Much work remains, however, at the first step of this framework—defining and understanding the scope of the problem, or establishing incidence and prevalence estimates. In this occasional paper, we provide an overview of the ways researchers have defined and estimated the scope of child sexual abuse, focusing on agency tabulations and large-scale surveys conducted over the last several decades. More precise estimates of the number of children affected by child sexual abuse would improve the ability of the public health, child welfare, pediatrics, and other communities to prevent and respond to the problem. We recommend using a comprehensive surveillance system to assess and track the scope of child sexual abuse. This system should be grounded by common definitional elements and draw from multiple indicators and sources to estimate the prevalence of a range of sexually abusive experiences.

Introduction

Child sexual abuse (CSA) is a significant public health and social justice concern affecting the lives of millions of individuals in the United States (Zimmerman & Mercy, 2010). CSA victimization crosses cultural and economic boundaries and has been linked to impaired neurological, physiological, and psychosocial functioning that contributes to a wide range of short- and long-term health consequences (Shonkoff et al., 2012). For example, large-scale longitudinal studies and meta-analyses indicate CSA is associated with reduced cognitive ability and educational achievement (e.g., Paolucci, Genuis, & Violato, 2001), impaired psychosocial functioning (e.g., depression) (e.g., Maniglio, 2009, 2013; Putnam, 2003), conduct problems (e.g., Maniglio, 2015), alcohol and other drug abuse (e.g., Putnam, 2003), and sexual risk behaviors and adolescent pregnancy (e.g., Abajohir, Kisely, Maravilla, Williams, & Najman, 2017; Maniglio, 2009; Senn, Carey, & Vanable, 2008). Even among those who have experienced multiple forms of victimization, CSA appears to have a unique, negative impact on psychosocial and sexual functioning (Lewis, McElroy, Harlaar, & Runyan, 2016; Senn et al., 2008). The direct and indirect financial costs associated with child maltreatment, including CSA, are enormous, costing the United States billions of dollars annually (Fang, Brown, Florence, & Mercy, 2012).

The last several decades of research on the individual, familial, and societal burden of CSA has underscored the need to address the problem from a public health perspective (Letourneau, Eaton, Bass, Berlin, & Moore, 2014; Mercy, 1999). This approach emphasizes prevention through a series of steps: (1) defining and measuring the scope of the problem; (2) developing and evaluating prevention programs and service delivery systems; and (3) supporting the dissemination, adoption, and delivery of the most effective interventions (Mercy, Rosenberg, Powell, Broome, & Roper, 1993). Much work remains, however, at the first step of this framework—defining and understanding the scope of the problem, or establishing empirically rigorous incidence and prevalence estimates. Imprecise estimates of the scope of CSA impede every step that follows,

including developing, evaluating, and supporting the dissemination and delivery of effective programs (Saunders & Adams, 2014). To highlight this important public health problem, the current paper provides an overview of how researchers have defined and estimated the scope of CSA, looking toward future epidemiological work.

Estimating the Scope of Child Sexual Abuse

Most of our present knowledge about the epidemiology of CSA has been garnered from a collection of studies conducted for many different purposes (Finkelhor & Wells, 2003; Saunders & Adams, 2014). These studies use data coming from two broadly defined sources: agency tabulations and self-report surveys (Finkelhor, 2011). Table 1 shows a “snapshot” of recent US-based data on CSA,* illustrating both the magnitude of CSA victimization and the range of estimates obtained from various agency tabulations and large-scale self-report surveys over the last two decades. For example, 2015 data from the National Child Abuse and Neglect Data System (NCANDS) indicates that US state and local Child Protective Services (CPS) agencies investigated 57,286 children for CSA (US Department of Health and Human Services, Administration on Children, Youth and Families, Children’s Bureau, 2017). Findings from the Fourth National Incidence Study of Child Abuse and Neglect (NIS-4), however, indicate that CPS may investigate approximately one-third of the actual number of CSA cases (Sedlak et al., 2010). Findings from the second National Survey of Children’s Exposure to Violence (NatSCEV II) indicate that approximately 28 percent of 14- to 17-year-olds report lifetime sexual violence victimization (Finkelhor, Turner, Shattuck, & Hamby, 2013), with meta-analyses of US-based studies yielding lifetime CSA prevalence rates of 8 to 40 percent (Bolen & Scannapieco, 1999; Gorey & Leslie, 1997).

All data sources that Table 1 presents involve prevalence estimates or prevalence rates (or both). Prevalence rates are a measure of the frequency

* This table is intended to be comprehensive and reflective of the largest US-based studies and data collection systems over the last two decades. However, it is not intended to be exhaustive.

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of child sexual abuse (CSA)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|---|---|---|---|
| Official Estimates—Agency Tabulations | | | |
| Reports to Police | | | |
| National Incident-Based Reporting System (NIBRS) (Ongoing; annual collection) | Incident-based reporting system for crimes reported to the police, including sexual assaults. In 2012, data from a sample of law enforcement agencies in 34 states and the District of Columbia were reported to the FBI through NIBRS (Federal Bureau of Investigation [FBI]). | Sexual assault, defined as forcible rape, forcible sodomy, sexual assault with an object, or forcible fondling. | Of all sexual assaults reported to law enforcement in the 1991 through 1996 NIBRS files, the majority (67%) involved child victims: 14% (9,539 children) were 0–5 years old, 20% (12,259 children) were 6–11 years old, and 33% (20,005) were 12–17 years old (Snyder, 2000). For years 2000–2007, there were 13,013 events of sibling sexual abuse reported to law enforcement (Krienert & Walsh, 2011). |
| Reports to Child Protective Services (CPS) Agencies (at least; may also include self-report or informant report) | | | |
| National Child Abuse and Neglect Data System (NCANDS) (Ongoing; annual compilation) | Official US government data source to which all states must contribute information about child maltreatment reports. Includes national- and state-level findings about child maltreatment investigations, assessments, and services (Administration for Children & Families [ACF], US Dept. of Health and Human Services [HHS]). | Involvement of the child in sexual activity to provide sexual gratification or financial benefit to the perpetrator, including contacts for sexual purposes, molestation, statutory rape, prostitution, pornography, exposure, incest, or other sexually exploitative activities. Perpetrator must be a parent, caretaker, or other person as defined under state law. | In 2015, some 57,286 children 0–17 years old were investigated for CSA (US Department of Health and Human Services, 2017). |
| National Survey of Child and Adolescent Well-Being (NSCAW) and NSCAW II (1999–2007 and 2008–2012) ^d | Nationally representative, longitudinal survey of children and families (NSCAW <i>N</i> = 5,501, NSCAW II <i>N</i> = 5,873 children) intended to answer a range of questions about the functioning, service needs, and service use of children who encounter the child welfare system. Includes caseworker report in addition to youth report and caregiver report (ACF). | Caseworker report: CSA reported by caseworker, based upon knowledge of a CPS investigation; definitions vary by state, but range from reported fondling/molestation to vaginal/anal intercourse. Youth report: Forced sex (against will)—both at first sex, and ever. Caregiver report: Their child was forced into sexual activity by an adult or older child, defined as either being touched by or forced to touch an adult or older child, in the last week, 3 months, 12 months, or ever. | In the NSCAW II baseline (2008–2009), more than 7% of all CPS investigations in the 2008–2009 baseline sample experienced CSA, as reported by a CPS caseworker. This would represent 157,590 children nationwide (Casanueva, Smith, Dolan, & Ringeisen, 2011). In the third wave of NSCAW II, 21% of girls aged 14–20 years and 3% of boys aged 14–20 reported ever having forced sex (Wilson et al., 2014). |

(continued)

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of CSA (continued)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|---|--|--|--|
| Official Estimates—Agency Tabulations (continued) | | | |
| Reports to Child Protective Services (CPS) Agencies (at least; may also include self-report or informant report) (continued) | | | |
| Fourth National Incidence Study of Child Abuse and Neglect (NIS-4) (2005–2006) | Congressionally mandated, nationally representative survey of 122 US counties in which community professionals, or “sentinels” ($N = 10,791$ professionals in 1,094 sentinel agencies), submitted data forms on any children they encountered who experienced maltreatment (ACF). | Intrusion sex without force, intrusion sex involving use of force, child’s prostitution or involvement in pornography with or without intrusion, molestation with genital contact, exposure/voyeurism, providing sexually explicit materials, failure to supervise child’s voluntary sexual activities, attempted or threatened sexual abuse with physical contact, or other/ unknown sexual abuse. | In 2005–2006, an estimated 180,500 children experienced CSA, representing a population rate of 2.4 victims per 1,000 children per year (Sedlak et al., 2010). ^c |
| Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) Consortium (1990–2012) ^d | Multisite, longitudinal study examining the causes and consequences of maltreatment. Children ($N = 1,354$) identified in infancy or early childhood as being maltreated or at risk of maltreatment were recruited from five geographically distinct areas. General study includes CPS record review and report by interviewer, caregiver, teacher, and youth every few years, from infancy through age 18. Data on CSA are collected via CPS records in addition to youth and caregiver reports (Children’s Bureau, ACF; Doris Duke Charitable Foundation). | <p>CPS records: Coding of official CPS records, including both allegations and substantiations.</p> <p>Youth report at age 12, 16, 18: Noncontact abuse, fondling and attempted fondling, oral-genital contact and attempted oral-genital contact, penetration and attempted penetration.</p> <p>Caregiver report at child age of 8: Report on whether caregiver suspects that their child has been sexually abused or has ever been reported to authorities for CSA.</p> | <p>At age 12, nearly 16% of youth self-reported ever experiencing CSA victimization (LONGSCAN, 1998).</p> <p>At age 16, nearly 8% of youth reported experiencing CSA between the ages of 12 and 16 (LONGSCAN, 2000).</p> <p>Select additional analyses with subsamples:</p> <p>Based on a subsample ($n = 977$) of children, 18% had one or more CPS allegations of sexual abuse between birth and age 16 years (Lewis et al., 2016).</p> <p>Based on a subsample ($n = 350$) of 12- to 13-year-olds, 2% had a history of CSA reports to CPS and 8% self-reported CSA victimization (Everson et al., 2008).</p> <p>Based on a subsample ($n = 986$) of 8-year-olds, 12% of boys and 24% of girls had a history of CSA victimization, per reports to CPS and/or caregiver report (Latzman & Latzman, 2015).</p> |

(continued)

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of CSA (continued)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|---|---|--|---|
| Self-Report Surveys | | | |
| Adolescent and Adult Report | | | |
| National Crime Victimization Survey (NCVS) (Ongoing; annual collection) | Large ($N > 90,000$ households) nationally representative household survey conducted annually with respondents aged 12 years and older. Information is collected about the experience of certain crimes against participants over the past year. CSA is included in a broad definition of rape/sexual assault (US Census Bureau). | Rape or attempted rape (including verbal threats of rape) and sexual assault or attempted sexual assault (including attacks or attempted attacks generally involving unwanted sexual contact, grabbing, fondling, verbal threats). | Across 2005–2010, there were 4 female victims of rape/sexual assault per 1,000 youth 12–17 years old per year (Planty, Langton, Krebs, Berzofsky, & Smiley-McDonald, 2013). |
| National Survey of Family Growth (NSFG) (Ongoing; every few years) | Large (N varies by data collection period, range: ~10,000–20,000 respondents) nationally representative in-person interview conducted every few years focused on the sexual and reproductive health of respondents 14–44 years old. Does not include information on CSA specifically, although age at first sex is captured. Questions about “non-voluntary intercourse with males” only asked of respondents aged 18 and older (CDC). | Sex before the age of 15 with someone 3 or more years older. | In the 2011–2013 surveys, 9% of females and 5% of males 18–24 years old reported <i>first</i> experience with sex before age 15 with someone 3 or more years older (Child Trends Databank, 2015). |
| Behavioral Risk Factor Surveillance System (BFRSS) (2010 and 2011) | Large national probability sample of telephone interviews with adults; operated by state health departments in collaboration with CDC. Some states include an optional module on adverse childhood experiences, which includes a question on CSA (CDC). | Forced touching or attempted or completed oral, anal, or vaginal intercourse with an adult or person at least 5 years older. | In a single-year study including data from five states ($N = 29,212$ adults), 12% of respondents reported experiencing CSA at some point in their life (Bynum et al., 2010). |
| National Intimate Partner and Sexual Violence Survey (NISVS) (2010, 2011) | Ongoing, random-digit-dial telephone survey of adults ($N > 16,000$ respondents) conducted in all 50 states and the District of Columbia. 12-month and lifetime prevalence data are collected on intimate partner violence, sexual violence, and stalking (CDC). | Broad range of victimization experiences assessed, including rape (completed or attempted forced penetration or alcohol- or drug-facilitated penetration) and sexual violence other than rape, including being made to penetrate a perpetrator, sexual coercion (nonphysically pressured unwanted penetration), unwanted sexual contact (e.g., kissing or fondling), and noncontact unwanted sexual experiences (e.g., being flashed or forced to view sexually explicit media). | Of all women who experienced rape at some point in their life, 40% experienced their first completed rape before the age of 18 years (Breiding et al., 2014). Of note, NISVS assesses a range of sexual victimization experiences; to date, however, reports regarding minors have focused only on rape before the age of 18 years. |

(continued)

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of CSA (continued)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|--|---|---|--|
| Self-Report Surveys (continued) | | | |
| Adolescent and Adult Report (continued) | | | |
| National Comorbidity Survey-Replication (NCS-R) (2001–2003) | Nationally representative US population survey (total $N = 9,282$ participants 18 years old and older) involving structured psychiatric interviews yielding DSM-IV diagnoses. Information on sexual victimization was collected (NIMH). | Rape or molestation before the age of 15. | Based on subset of the total population ($n = 4,141$), 11% of the sample (16% of women and 4% of men) reported rape or molestation before the age of 15 (Cogle, Timpano, Sachs-Ericsson, Keough, & Riccardi, 2010). |
| Adverse Childhood Experiences (ACE) Study (1995–1997) | Large ($N = 17,337$ adults) mail-home survey of health maintenance organization (HMO) members in California undergoing a comprehensive physical examination. Participants provided information on their childhood experiences, including CSA (CDC). | Forced touching or attempted or completed oral, anal, or vaginal intercourse with an adult or person at least 5 years older. | 22% of the total sample reported CSA victimization (Felitti et al., 1998). |
| National Comorbidity Study (NCS) (1990–1992) | Nationally representative US population survey (total $N = 8,098$ participants 15–54 years old) involving structured psychiatric interviews yielding DSM-III-R diagnoses. Information on sexual victimization is collected (National Institute of Mental Health [NIMH]). | Rape or molestation before the age of 18. | Based on subset of the total population ($n = 5,877$), nearly 14% of females and nearly 3% of males reported first rape/molestation before age 18 (Molnar, Buka, & Kessler, 2001). |
| Youth Report and Caregiver Proxy Report | | | |
| National Incidence Studies of Missing, Abducted, Runaway and Thrownaway Children (NISMAART-2) (1997–1999; NISMAART-3 underway) | Large national probability sample of computer-assisted telephone interviews with both adult caregivers ($N = 16,111$ proxy interviews on behalf of youth 0–9 years old) and youth ($N = 5,015$ interviews with youth 10–17 years old). The primary purpose is to develop national estimates of missing children, although detailed information on sexual victimization is also included (US Office of Juvenile Justice and Delinquency Prevention [OJJDP]). | Rape, attempted rape, sexual assault (defined as unwanted sexual contact that involves the use of force or threat), and attempted sexual assault (defined as unsuccessful attempt at unwanted sexual contact that is not an attempted rape and does not actually involve any unwanted sexual contact). Noncontact sex-related crimes, defined as exhibitionism and voyeurism. | In 1999, an estimated 285,400 children were victims of sexual assault, representing a population rate of about 4 victims per 1,000 children per year. For 29% of victims, the perpetrator was 17 years old or younger. An additional 35,000 children were victims of noncontact sex-related crimes (Finkelhor, Hammer, & Sedlack, 2008). |

(continued)

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of CSA (continued)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|--|---|---|---|
| Self-Report Surveys (continued) | | | |
| Youth Report and Caregiver Proxy Report (continued) | | | |
| Pooled analyses of the DVS, NatSCEV I, and NatSCEV II (Analyses conducted in 2013) | These analyses drew on three very similarly designed national telephone surveys of youth, resulting in a pooled sample of 781 youth aged 15 years, 804 aged 16 years, and 708 aged 17 years. Analyses examined sexual abuse and sexual assault victimization. | Contact CSA defined as forced touching by an adult 18 years old or older. Sexual assault defined as forced “sexual things” or forced or attempted sex by someone aged 17 years or younger. | The lifetime experience of 17-year-olds with sexual abuse and sexual assault was nearly 27% for girls and just over 5% for boys. The lifetime experience with sexual abuse and sexual assault at the hands of adult perpetrators exclusively was 11% for females and 2% for males. For females, the rate of sexual abuse and assault victimization rose from 17% at age 15 to 27% at age 17. For males, it rose from 4% at age 15 to 5% at age 17 (Finkelhor, Shattuck, Turner, & Hamby, 2014). |
| National Survey of Children’s Exposure to Violence II (NatSCEV II) (2011) | See NatSCEV I; NatSCEV II sample included 4,503 children 0–17 years old. Supplemented with two additional samples—a random-digit-dialing sample of cell phones and an address-based sample (OJJDP and CDC). | Sexual violence victimization, defined as sexual assault, attempted or completed rape, sexual exposure, sexual harassment, statutory sexual offenses, or internet sex talk. | 6% of the total sample of youth and 16% of those aged 14–17 years reported sexual violence victimization in the last year. Nearly 10% of the total sample of youth and 28% of those aged 14–17 years reported lifetime sexual violence victimization (Finkelhor et al., 2013). |
| National Survey of Children’s Exposure to Violence I (NatSCEV I) (2008) | Nationally representative telephone survey of adults and children ($N = 4,549$ children 0–17 years old; parent interviews conducted on behalf of children 0–9 years old, interviews with youth 10–17 years old) conducted in the contiguous United States, excluding New Hampshire. Prevalence data are collected on a range of victimization experiences, including CSA. Supplemented with oversamples of households in areas with high concentrations of minorities and low-income families (OJJDP and CDC). | Sexual violence victimization, defined as sexual assault, attempted or completed rape, sexual exposure, sexual harassment, or statutory sexual offenses. | 6% of the total sample of youth and 16% of those aged 14–17 years reported sexual violence victimization in the last year. 11% of the total sample of youth and 27% of those aged 14–17 years reported lifetime sexual violence victimization (Finkelhor, Turner, Ormrod, & Hamby, 2009). |
| National Survey of Adolescents-Replication (NSA-R) (2005) | National household probability telephone study of 3,614 youth 12–17 years old using structured telephone interviewing. Data are collected on a range of adolescent behaviors, including sexual victimization (NICHD). | Sexual assault, defined as forced penetration or forced touching of genitalia. | 8% of the total sample of youth reported sexual assault victimization; 7% of youth reported that the assault occurred in early childhood (0–5 years old). When restricted to the 17-year-olds in the sample, 20% of girls and 5% of boys reported sexual assault victimization (Saunders & Adams, 2014). |

(continued)

Table 1. Example US-based large-scale studies and meta-analyses assessing prevalence of CSA (continued)

| Data Source/ Study (Data Collection Year[s]) | Data Source/Brief Study Description (Sponsoring Agency Organization) | CSA/Sexual Victimization Definition ^a | Select Prevalence Estimate/Rate Data ^b |
|--|---|--|---|
| Self-Report Surveys (continued) | | | |
| Youth Report and Caregiver Proxy Report (continued) | | | |
| Developmental Victimization Survey (DVS) (2003) | Nationally representative telephone survey of adults and children (N = 4,549 children 0–17 years old; parent interviews conducted on behalf of children 0–9 years old, interviews with youth 10–17 years old). Incidence data was collected on a range of victimization experience, including CSA. Supplemented with oversamples of households in areas with high concentrations of minorities and low-income families (OJJDP). | Sexual assault, completed or attempted rape (attempted rape could include verbal threats to rape without actual physical contact), being flashed, experiencing sexual harassment, and statutory sexual offenses. | One in 12 of the total sample (82 per 1,000) had experienced a sexual victimization in the study year, including 32 per 1,000 who experienced a sexual assault and 22 per 1,000 who experienced a completed or attempted rape (Finkelhor, Ormrod, Turner, & Hamby, 2005). |
| Meta-Analyses^e | | | |
| Bolen & Scannapieco (1999) | Meta-analysis of 22 US-based studies from the years 1980 to 1998, including those done with national samples as well as local or regional representative samples. | Varied across included studies. | An estimated 30% to 40% of females and 13% of males experience CSA (with prevalence rates across studies ranging from 2% to 62%; Bolen & Scannapieco, 1999). |
| Gorey & Leslie (1997) | Meta-analysis of 16 cross-sectional studies (14 US-based studies, 2 Canada-based studies) from the years 1969 to 1991 involving retrospective report among North American adults in nonclinical samples. | Varied across studies; analyses considered impact of narrow (e.g., “severe” abuse, involved force) vs. broad (e.g., ever experienced any of four to eight behaviors) definitions of CSA. | An estimated 12% to 17% of females and 8% to 9% of males experience CSA. Studies that used a broad definition provided higher prevalence rates (36% of females and 12% of males) than when narrow definitions were used (8% of females, 7% of males; Gorey & Leslie, 1997). |

Notes: ACE = Adverse Childhood Experiences Study; ACF = Administration for Children & Families; BFRSS = Behavioral Risk Factor Surveillance System; CDC = Centers for Disease Control and Prevention; CPS = Child Protective Services; DVS = Developmental Victimization Survey; FBI = Federal Bureau of Investigation; HHS = US Department of Health and Human Services; LONGSCAN = Longitudinal Studies of Child Abuse and Neglect; NCANDS = National Child Abuse and Neglect Data System; NIBRS = National Incident-Based Reporting System; NatSCEV I (NatSCEV II) = National Survey of Children's Exposure to Violence I (and II); NCS = National Comorbidity Study; NCS-R = National Comorbidity Survey-Replication; NCVS = National Crime Victimization Survey; NICHD = Eunice Kennedy Shriver National Institute on Child Health and Human Development; NIMH = National Institute of Mental Health; NIS-4 = Fourth National Incidence Study of Child Abuse and Neglect; NISMART-2 (NISMART-3) = Second (Third) National Incidence Studies of Missing, Abducted, Runaway and Thrownaway Children; NISVS = National Intimate Partner and Sexual Violence Survey; NSA-R = National Survey of Adolescents-Replication; NSCAW = National Survey of Child and Adolescent Well-Being; NSFG = National Survey of Family Growth; OJJDP = US Office of Juvenile Justice and Delinquency Prevention.

^a Definitions reflect those included on agency websites, reports, or publications using sexual abuse victimization data.

^b Data selected are either the most recently available that the authors could find or the original study source.

^c Based on the endangerment standard, which “counts children who were not yet harmed by abuse or neglect if a sentinel thought that the maltreatment endangered the children or if a CPS investigation substantiated or indicated their maltreatment” (Sedlak et al., 2010, p. 3).

^d NSCAW and LONGSCAN are selected samples, not nationally representative. However, they are included here because NSCAW is the largest nationally representative survey of children with child maltreatment investigations, and LONGSCAN is the largest multi-site effort to develop and use common assessments and methodologies as they relate to maltreatment and other victimization experiences.

^e Only North American (predominately US-based) meta-analyses are included here, given work indicating that geographic origin of samples may influence prevalence.

with which specified events—here, CSA—occur in a specific population in a designated period of time (Last, 2007). True incidence data, meaning the number of new cases of CSA during a specific period of time, are difficult to obtain, as events reported to agencies may represent the first contact with CPS or police, but not necessarily the first occurrence (Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011).

Obtaining precise estimates of the scope of CSA is difficult for several conceptual and methodological reasons, including wide-ranging definitions of CSA in addition to variations in respondents and sources of information, sample selection, screening approaches, and survey methods (e.g., Fanniff & Kolko, 2012; Amaya-Jackson, Socolar, Hunter, Runyan, & Colindres, 2000; Bolen & Scannapieco, 1999; deTyche, Laurent, Lighezzolo-Alnot, Garnier, & Vandelet, 2015; Gorey & Leslie, 1997; Hamby & Gray-Little, 2000; Stoltenborgh et al., 2011). These challenges are not new; three decades ago, Wyatt and Peters (1986a, 1986b) outlined very similar issues to those described only briefly here when attempting to make sense of the various prevalence estimates obtained by, at that point, four relatively small studies.

Perhaps the most evident challenge is that “child sexual abuse” is complex, and operational definitions of each word in the term have varied across various clinical, legal, and research contexts. Definitions of CSA vary in terms of the acts (e.g., contact, noncontact), ages (e.g., upper limit of childhood, required age difference between the perpetrator and victim), and types of relationships (e.g., adult caregiver, any adult, adolescent, or peer) specified. These differences in coverage and terminology influence surveillance and reporting efforts (Prevoo, Stoltenborgh, Alink, Bakermans-Kranenburg, & Ijzendoorn, 2017). Historically, there has been some disagreement as to whether noncontact abuse (e.g., exhibitionism, voyeurism) is abusive (Finkelhor, 1994). However, over the last decades, the child protection and public health fields have evolved toward a more comprehensive understanding of CSA.

For example, the US Centers for Disease Control and Prevention (CDC) defines CSA as any completed or attempted sexual act (e.g., penetration), sexual

contact with (e.g., fondling), or exploitation (i.e., noncontact sexual interaction such as exhibitionism, voyeurism, exposure to pornography, child prostitution) of a child by a parent, caregiver, or other in a custodial role (e.g., clergy, coach or teacher; Leeb, Paulozzi, Melanson, Simon, & Arias, 2008).

The World Health Organization (WHO) uses an even broader definition, including sexual activity between a child and another child who by “age or development is in a relationship of responsibility, trust or power” (WHO, 2003, p. 75). We used the WHO’s broad definition of CSA (see Note 1) when selecting data systems and studies to include in Table 1.

Note 1: Toward a Broad Definition of Child Sexual Abuse

The World Health Organization defines child sexual abuse as:

the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society. Child sexual abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person. This may include but is not limited to: the inducement or coercion of a child to engage in any unlawful sexual activity; the exploitative use of a child in prostitution or other unlawful sexual practices; the exploitative use of children in pornographic performance and materials. (1999, p. 62)

Agency Tabulations

Current estimates based upon agency tabulations fall into one of two categories: crimes reported to the police versus abuse reported to CPS agencies. As Table 1 shows, data analyzed from the FBI’s National Incident-Based Reporting System (NIBRS), a widely used source of crime statistics in the United States, highlights the magnitude of child sexual violence victimization. However, the reporting system is currently limited to a narrow definition of victimization (contact sexual assault only) and to date, federal reports and other publications using the NIBRS report on sexual assault generally (regardless of the age at victimization) and only rarely present statistics on CSA (for exceptions, see Finkelhor,

Ormrod, & Chaffin, 2009; Krienert & Walsh, 2011; Snyder, 2000). However, the National Crime Statistics Exchange ([NCS-X], currently in the planning phase; Bureau of Justice Statistics, 2016) will boost the ability of the NIBRS to produce national estimates of crime, including CSA. Data from the 400 additional law enforcement agencies recruited through the NCS-X will allow for more sophisticated analyses, allowing rates to be disaggregated by important victim-offender characteristics (e.g., victim-perpetrator age gap, specific relationship).

Estimates based upon reports to CPS agencies are based on more inclusive definitions of CSA than are crimes tabulated by the police, particularly in terms of the types of acts counted (US Department of Health and Human Services, 2017). Across states, definitions of CSA used by CPS agencies include both completed and attempted acts in addition to both contact- and noncontact offenses, such as exposure to pornography or taking or using unwanted sexual images. Several national estimates (NCANDS and the National Survey of Child and Adolescent Well-Being [NSCAW and NSCAW II]) are derived entirely or in part from data from CPS agencies and reports from child welfare and other professionals (such as the NIS-4). See Note 2 for more about commercial sexual exploitation (CSE) and sex trafficking of minors, which are gaining recognition—as seen by recent federal and state child welfare legislation—as a form of CSA.

Studies based on cases coming to the attention of authorities have the advantage that professional judgment, a medical evaluation, or jurisprudence is typically involved in the determination that an allegation of CSA was supported or investigation is warranted (Finkelhor, 2011). Further, reports from child welfare and other agencies are helpful for tracking the number of cases to which professionals are called to respond (Finkelhor, 2011). Nonetheless, estimates based upon reports to police or CPS agencies share important limitations. Many cases of abuse are known by the victimized child only (McElvaney, 2015) or are never reported to authorities by parents (Finkelhor, 1994) or even by mandated reporters (Sedlak et al., 2010). For example, Finkelhor (1994) found that among parents who were aware of CSA involving their children, only 42 percent reported it to authorities, often because they did not find the event was serious enough or they wanted to deal with it within the family.

Furthermore, what constitutes “reasonable suspicion” of abuse, the standard threshold for mandated reporting of suspected CSA, is often interpreted differently by professionals (Levi & Brown, 2005; Mathews, 2014). Children who disclose victimization and cases that get reported may be different in type or nature from those that are not (Hanson, Resnick, Saunders, Kilpatrick, & Best, 1999; Pinto & Maia, 2013). For example, males are less likely than females

Note 2: Commercial Sexual Exploitation (CSE) and Sex Trafficking of Minors

Commercial sexual exploitation (CSE) and sex trafficking of minors refer to a range of crimes, including the coercion of a child to engage in any unlawful or psychologically harmful sexual activity, commercially (e.g., trafficking for sexual purposes) or otherwise; the use of children in prostitution or other unlawful sexual practices; the participation of children in pornographic performances and materials; and the solicitation of children for sexual purposes (Clayton et al., 2013).

The definition of child sexual abuse (CSA) used by child welfare and public health agencies has recently expanded to include these forms of abuse (Clayton, Krugman, & Simon, 2013). The methodologies for estimating the incidence and prevalence of this form of sexual abuse are not well developed (Clayton et al., 2013; Gibbs, Walters, Lutnick, Miller, & Kluckman, 2015; Kotrla, 2010; Rothman et al., 2017). Therefore, estimates vary widely and

are recognized as more unstable than estimates of others forms of CSA. Researchers reporting estimates of CSE have even gone so far as to implore readers not to cite the numbers presented (Stransky & Finkelhor, 2008). Fortunately, several recent federal efforts will improve our understanding of the scope of CSE and sex trafficking.

The Preventing Sex Trafficking and Strengthening Families Act, signed into law in 2014, requires state child welfare agencies to develop and implement policies to identify and serve youth who have been or are at risk of sex trafficking. Further, it mandates that agencies report sex trafficking victims to both law enforcement and report in aggregate the number of victims in their care to the federal government. These provisions are further strengthened by the Justice for Victims of Trafficking Act (Pub. L. 114-22), signed into law in 2015. This law requires states to consider all children identified as victims of sex trafficking to be victims of child abuse and neglect. Support provided to states through these acts suggests opportunities for identifying previously unreported sex trafficking victims.

to disclose abuse (O’Leary & Barber, 2008), and cases involving male (vs. female) victims may be less likely to be substantiated (Maikovitch, Koenen, & Jaffee, 2009). Reported cases are also more likely to involve strangers, physical injury, and threats against life than are unreported cases (Hanson et al., 1999).

Additionally, the child welfare field has traditionally focused on abuse by a parent or someone in a custodial role[†]; thus, systems such as NCANDS exclude a substantial number of sex offenses against children, in particular those committed by non-family members such as similar-aged peers or older adolescents. For example, in some states (e.g., Alabama), CSE and sex trafficking of minors is not considered a form of child maltreatment when the alleged perpetrator is not a family member or caregiver (Child Welfare Information Gateway, 2016). However, the criminal justice system has traditionally been reluctant to become involved in intrafamily matters except when the violations are severe (Finkelhor, 2008); consequently, intrafamilial offenses may be severely undercounted in police report statistics such as NIBRS. Relying on either police or child welfare agency tabulations alone to determine the magnitude of CSA underestimates the number of offences and likely does not reflect the groups at highest risk.

Self-Report Surveys

A benefit of self-report surveys is that they can detect abuse never reported to an official agency and frequently unknown by anyone beyond the child abused and the perpetrator(s). Research consistently demonstrates that self-report methods yield higher prevalence rates than informant reports (e.g., caregiver reports; Stoltenborgh et al., 2011) or CPS records (e.g., Everson et al., 2008). Indeed, a recent analysis of a large birth cohort found that although more than 25 percent of adults surveyed reported that they had experienced CSA, less than 6 percent of the cases were reported to the relevant statutory authority (Mills, Kisley, Alatai, Strathearn, & Najman, 2016).

However, the ability of such surveys to capture cases accurately depends, in part, on survey methods. For example, estimates of violence experiences vary depending on screening approaches (Bolen & Scannapieco, 1999), how questions are asked (e.g., whether respondents are required to label their own experiences as abusive; Fricker, Smith, Davis, & Hanson, 2003; Hamby & Gray-Little, 2000; Stoltenborgh et al., 2011), how many questions are asked (Fricker et al., 2003; Prevoo et al., 2017), whether multiple questions are rolled into one (Perona, Bottoms, & Sorenson, 2005), length of the recall period (Bell, 2007; Czaja, Blair, Bickart, & Eastman, 1994), whether recall aids are provided (e.g., anchoring events that occurred in the time period in question; Hamby & Finkelhor, 2000), and the type and number of response options provided (Borgers, de Leeuw, & Hox, 2000). For example, studies consistently find use of valid, behaviorally specific assessment (e.g., “Before the age of 16, did anyone [male or female] ever make you touch his or her genitals or breasts?”) results in higher reported rates of CSA than does the use of general “label” questions (e.g., “Before the age of 16, were you ever sexually abused?”; Craner, Martinson, Sigmon, & McGillicuddy, 2015; Gorey & Leslie, 1997). These issues are reviewed more thoroughly elsewhere (e.g., see Amaya-Jackson et al., 2000; de Tychev et al., 2015; Hardt & Rutter, 2004).

Adult Self-Report Surveys

Most of the largest US-based population-level self-report surveys fielded over the last decades ask adult (and sometimes adolescent) respondents to report on their past year or lifetime victimization experiences. These retrospective self-report surveys have played a critical role in bringing the enormous epidemic of sexual violence against children and youth to the forefront of clinical, research, and public policy agendas. Furthermore, surveying older populations avoids the many challenges inherent in interviewing children about victimization experiences, such as challenges relating to methodology (e.g., the need to use a shorter administration time for children versus adults; Bell, 2007; Borgers et al., 2000) and practical challenges regarding parental consent and research staff training (e.g., training on mandated reporting; Becker-Blease & Freyd, 2006).

[†] For exceptions, see state statutes on the Child Welfare Information Gateway (2016). For example, Arkansas state statutes outline separate categories of acts considered abusive depending on the age of perpetrator and relationship to the victim.

Nonetheless, adult self-report surveys are subject to important limitations. Retrospective reports do not permit comparisons over time, and regardless of survey methods used, surveys of older adolescents and especially adults are subject to high rates of false negatives, potentially due to memory-related biases (Hardt & Rutter, 2004). Surveys of adults also tend to include a narrower definition of CSA, limited to contact sexual abuse only (e.g., the Adverse Childhood Experiences [ACE] Study, the ACE module included in some states' ongoing administration of the Behavioral Risk Factor Surveillance System [BRFSS], the National Comorbidity Survey [NCS], the National Comorbidity Survey-Replication [NCS-R], the National Survey of Family Growth [NSFG], and the National Crime Victimization Survey [NCVS]).

CSA prevalence estimates derived from population-level surveys also tend to include large numbers of offenses perpetrated by similar-aged peers (Finkelhor et al., 2014). For example, the NCVS asks respondents age 12 and older to report on rape and sexual assault victimization, without asking the age of the perpetrator. Therefore, estimates derived from the NCVS data combine sexual abuse of a child or adolescent by an adult with abuse by a similar-age peer. Similarly, the ACE module in the BRFSS asks about contact sexual abuse with an adult or person at least 5 years older; although this likely excludes most cases of dating or peer sexual abuse, failure to ask about relationship to the perpetrator results in rates combining instances of abuse of a child by an adult, abuse by an older adolescent, and statutory rape.

The only nationally representative survey of adults of which we are aware that collects information on both age at victimization and age of and relationship to the perpetrator is the National Intimate Partner and Sexual Violence Survey (NISVS). To date, reports have not yet focused on CSA and have only provided general information on sexual assaults, such as the percentage of female victims of completed rape first experiencing rape before the age of 18 years (Breiding, Smith, Basile, Walters, Chen, & Merrick, 2014). Although subject to the limitations of retrospective report, more detailed analyses by age at victimization and age of the perpetrator, when

released, will contribute significantly to the discussion of sexual assault separate from lifetime prevalence of sexual abuse experienced in childhood.

Youth Self-Report Surveys

Some researchers suggest that the most valid estimates come from direct surveys of children and adolescents, which provide direct access to the child's perceived experience (Amaya-Jackson et al., 2000; Saunders & Adams, 2014). Apart from the National Survey of Adolescents-Replication (NSA-R), all studies in the Youth Report and Caregiver Proxy Report section of Table 1 obtain caregiver proxy report for youth younger than 10 years of age and obtain self-report data for youth 10 years old and older.

Perhaps the best known nationally representative youth self-report and parent proxy report studies are the Developmental Victimization Survey (DVS; Finkelhor et al., 2005) and the NatSCEV I (Finkelhor, Turner, et al., 2009) and its follow-up, the NatSCEV II (Finkelhor et al., 2013). These studies use similar methodology and assess a more comprehensive range of sexual victimization experiences (e.g., including noncontact offenses such as exposure and harassment) than do all the adult retrospective report studies outlined in Table 1. Further, these studies ask respondents to report on the age of the perpetrator, allowing for findings to be reported separately for sexual abuse perpetrated by adults vs. adolescents. Recently, Finkelhor and colleagues (2014) pooled data from these three studies to report lifetime prevalence of *contact* CSA perpetrated by adults (forced touching and/or forced sex) as reported by 17-year-olds; these estimates (11.2 percent and 1.9 percent prevalence for girls and boys, respectively) are perhaps the most contemporary estimates of contact CSA available for the United States. It is worth pointing out, however, the estimates provided for juvenile-perpetrated sexual assault (17.8 percent as reported by 17-year-old girls and 3.1 percent as reported by 17-year-old boys) include sexual victimization of both much younger children and/or similar-aged peers.

Although cited much less frequently than the DVS or NatSCEV surveys, the National Incidence Studies of Missing, Abducted, Runaway and Thrownaway Children (NISMA-2) are another important

source of epidemiological data on CSA. NISMART-2 captures a large range of victimization experiences, including both contact and noncontact CSA; information was also collected with regard to the child's relationship to the perpetrator, allowing for specific estimates of CSA perpetrated by various groups (e.g., family members, acquaintances, juveniles). Perhaps because the primary purpose of the studies is to develop national estimates of missing children, data on sexual victimization were not released for years (the most recent data collection took place in 1999, with data regarding CSA published in 2008). These data have been generally underused; for example, Finkelhor et al. (2008) is the only publication reporting on CSA we are aware of.

Similar to estimates provided by the pooled DVS, NatSCEV I, and NatSCEV II data (Finkelhor et al., 2014), estimates provided with NISMART-2 data (Finkelhor et al., 2008) also fail to distinguish between CSA perpetrated by an older juvenile against a younger child and abuse perpetrated by an older juvenile against a similar-aged peer. Furthermore, rates of intrafamilial CSA reported in NatSCEV and NISMART-2 are relatively low compared with adult retrospective reports, indicating that children may be less likely to report intrafamilial CSA when they are still living at home (IOM & NRC, 2014).

Avenues for Future Work

There appears to be interest in obtaining more precise estimates of the scope of CSA: our scan of the literature indicates the US Department of Health and Human Services (e.g., ACF, CDC, NIH), US Census, and US Department of Justice (e.g., FBI, OJJDP) have all funded work in the last two decades related to CSA epidemiology. These efforts have resulted in advancements in the measurement of CSA, particularly around child and adolescent self-report surveys. The NatSCEV efforts point to the possibility of more coordinated and multiple cohort study of CSA, and NSCAW and LONGSCAN, although selected and not representative of the general population, have had success with multimodal assessment.

A clear and comprehensive understanding of the number of children affected by CSA would improve

the ability of the public health, child welfare, pediatrics, and other communities to gauge the magnitude of CSA in relation to other problems, identify those at highest risk, monitor trends in incidence and prevalence over time, and monitor effectiveness of prevention and intervention efforts (Leeb et al., 2008; Merrick & Latzman, 2014). In service of improving our understanding of the scope of CSA, below we briefly outline several issues that warrant attention in future work.

Definitions of Terms Related to Child Sexual Abuse

A key foundation of a surveillance system is collection, coordination, and sharing of data in a consistent way using common definitions (Thacker, Qualters, & Lee, 2012). As demonstrated in Table 1, CSA definitions and terminology vary widely across data collection systems and research studies. This is perhaps, in part, a reflection of a field often conducting work in "siloes." Many different fields or sectors, including law enforcement, child protection, and public health, claim jurisdiction in this area. There is even within-field fragmentation, with child maltreatment and sexual violence prevention work often conducted separately through independent funding streams.

Siloes aside, we agree with the Institute of Medicine/ National Research Council Committee on Child Maltreatment: The use of a single, uniform definition for CSA is "neither feasible nor optimal" given varied research questions, contexts, and capacities (IOM & NRC, 2014, p. 399). Nonetheless, the field would benefit from a flexible definition, accompanied by guiding principles and a set of "definitional elements" (p. 399) that can be selected for use in specific types of research. Definitional elements could be designed to best allow for comparison across studies and sectors (IOM & NRC, 2014). The CDC's uniform definitions for the collection of public health surveillance data on child maltreatment (Leeb et al., 2008) may be a good starting place in this effort.[‡]

[‡] Our understanding of sex trafficking in particular has advanced a great deal since the publication of this report. Contrary to the definition provided in the report, sex trafficking does not necessarily involve physical restraint or movement of victims across state or national borders (ACE, 2017).

It is worth considering what is lost (or potentially gained) using different definitional elements (e.g., acts counted as abuse; required age difference, if any; types of relationships counted). For example, child welfare is traditionally concerned about abuse by caregivers, which raises the question: if child welfare agencies are not capturing CSA by non-caregivers, are other fields or agencies adequately doing so? Questions such as these may be particularly important in the case of CSE and sex trafficking of minors; until recently, victims were not routinely “counted” or served within the child welfare system, and they may still not be unless the perpetrator is a caregiver.

Along these lines, it is also important that researchers clearly define populations and behaviors studied. For example, Finkelhor and colleagues (2014) recommend the terminology “childhood sexual abuse and assault” when researchers report data that combine CSA perpetrated by adults and assaults at the hands of similar-age peers. To the extent possible, we also recommend researchers report separately data on adolescent victimization of similar-aged peers (e.g., including dating sexual abuse). These distinctions are important for researchers, policymakers, and practitioners developing programs and allocating resources based upon these statistics. The last two decades of research highlight the importance of examining victim age: there are different risk factors and outcomes (e.g., recidivism) associated with adolescent-perpetrated sexual violence against younger children versus a similar-aged peer or dating partner (Fanniff & Kolko, 2012; Leroux, Pullman, Motayne, & Seto, 2016; Robertiello & Terry, 2007), pointing to the need for varied programmatic targets.

Comprehensive Surveillance

We, like many of our colleagues, recommend a comprehensive surveillance system for assessing and tracking the scope of CSA (Association for the Treatment of Sexual Abusers, 2011; Letourneau et al., 2014; McMahon, 2000; IOM & NRC, 2014). As noted by McMahon (2000), public health has clearly demonstrated the value of comprehensive, timely measurement for the management and reduction of a wide variety of health problems, including AIDS, tuberculosis, and, more recently, Sudden Infant Death

Syndrome. These systems gather and report national, regional, and local rates with only a brief time lag and are supplemented by national health epidemiological surveys of the general population. But developing a public health surveillance system for any violent behavior is undoubtedly more difficult (McMahon, 2000). Relatively few cases of CSA are reported to authorities, and those that do may represent the first contact with a public system, but not necessarily the first occurrence. Thus, an ideal system would gather information from multiple sources and indicators (e.g., IOM & NRC, 2014; Merrick & Latzman, 2014). In fact, a National Academies Press report pointed to problems in the epidemiology of child maltreatment and called for a “high-quality, population based, epidemiological surveillance system that draws on multiple data sources” (IOM & NRC, 2014, p. 9). In line with these recommendations, the Attorney General’s National Task Force on Children Exposed to Violence recommends “continu[ing] to support and sustain the national data collection infrastructure for the monitoring of trends in children exposed to violence” (Listenbee et al., 2012).

A comprehensive surveillance system drawing from multiple sources and using common definitions of CSA will allow for more accurate monitoring of trends. Analysis from a variety of sources, including those outlined in Table 1 (e.g., NCANDS, NIS, NCVS, NSFG, NatSCEV), has pointed to declines in the rates of CSA victimization since the early 1990s, mirroring an improvement in many other indicators of crime, sexual behavior, and family problems over the same period (Finkelhor & Jones, 2012). Nonetheless, at least one study (NSA) did not show a decline in CSA between 1995 and 2005 (Finkelhor & Jones, 2012). Of note, available trend data are based upon prevalence estimates and do not speak to whether there has been a reduction in *new* cases of CSA over time.

Data Sources

Agency tabulations are an important part of a surveillance system for CSA, and as noted earlier, both police and child welfare data collection systems are soon to see great improvements. Efforts resulting from the NCS-X will enhance the NIBRS’s ability to produce national estimates of police-reported CSA, and per the Justice for Victims of Trafficking

Act, states will soon report trafficking victims to NCANDS, if they are not already.

Despite these improvements, most cases of CSA are never reported to social services or police. Therefore, incorporating data from additional sources is necessary to determine the true scope of the problem. Many researchers have turned to proxy sources such as parents, caregivers, or teachers to collect information on a child's victimization (Øverlien, Thoresen, & Dyb, 2013). However, because a high percentage of victimizations occur out of sight of caregivers or proxies, particularly once children reach school age and spend significant periods of time outside of the home, we recommend using child and adolescent-self report when possible. Although the DVS, LONGSCAN, NatSCEV, and NISMART-2 surveys have interviewed children aged 11 and older, the NSCAW surveys, with developmentally sensitive measures and interviewing techniques and a high degree of consideration of ethical issues, have seen success in interviewing children as young as 8 years old (Dolan, Smith, Casanueva, & Ringeisen, 2011). Hamby and Finkelhor (2000) recommend collecting self-report data with children as young as age 7 years. Victimization research with younger children has shown internal consistency, test-retest reliability, and construct validity of responses comparable with those obtained from older children (e.g., Richters & Martinez, 1993; Shahinfar, Fox, & Leavitt, 2000).

Because sexually abused children encounter numerous systems (e.g., social services, law enforcement health care, education), aggregating data across multiple sources could also improve the identification of cases not referred to child protection or justice authorities (Medina, Sell, Kavanagh, Curtis, & Wood, 2012). Use of multiple data sources may be particularly important to understand the scope of CSA within subpopulations; for example, the NCANDS does not capture accurate rates of CSA among American Indian and Alaska Native children, as there are no mechanisms for tribal child welfare systems to submit data to this system (US Department of Health and Human Services, Administration on Children, Youth, and Families, Children's Bureau, 2017).

Reported cases could be supplemented with administrative health data, such as hospital records (McKenzie, Scott, Frazer, & Dunne, 2012), Medicaid claims (Raghavan, Brown, Allaire, Garfield, Ross, & Hedeker, 2015), or vital statistics (Putnam-Hornstein, Webster, Needell, & Magruder, 2011). For example, in an Australian sample, McKenzie and colleagues (2012) found that about 1 in 15 children had hospital codes for maltreatment but could not be linked to CPS data, highlighting the potential contribution of hospital-based data to identify previously unreported victims. Health care agencies (e.g., emergency departments, family planning clinics, urgent care centers) may be particularly promising venues for identification of minor victims of CSE and sex trafficking. Victims may be brought in for care for a variety of problems, including physical injury, infection, exacerbations of chronic conditions, complications of substance abuse/overdose issues, or pregnancy testing, contraceptive care, and other reproductive issues (Lederer & Wetzel, 2014). However, more research is needed to develop clinically validated screening tools for the health care setting (Greenbaum, 2014).

A final note: we recognize that CSA often co-occurs with other adverse childhood experiences (e.g., peer or sibling victimization, emotional abuse), with NatSCEV data indicating that 90 percent of children who have experienced various forms of CSA suffer from four or more additional types of victimization (e.g., physical abuse; Finkelhor, Ormrod, & Turner, 2007). Although the review of other adverse childhood experiences is beyond the scope of this review, we want to acknowledge the importance of tracking the epidemiology of CSA alongside these co-occurring risks, especially since many prevention programs are cross-cutting (Fortson, Klevens, Merrick, Gilbert, & Alexander, 2016). Given the unique nature and impact of CSA (e.g., Feiring, Taska, & Lewis, 1996; Lewis et al., 2016), however, we do caution against sacrificing depth entirely for breadth, which could possibly result in an inability to disentangle CSA and its contextual characteristics from other forms of abuse or adversity. This underscores the need for a succinct set of CSA definitional elements and use of multiple sources and indicators to track the scope of the problem.

Conclusion

CSA impacts the lives of far too many children, adolescents, families, and communities. To highlight this important public health problem, we provided an overview of how researchers have defined and estimated the scope of CSA over the last several decades. Most of our knowledge about the epidemiology of CSA has been informed by a range of studies using very different definitions of CSA, resulting in a range of prevalence estimates. More precise understanding of the number of children affected by CSA would improve the ability of the public health, child welfare, pediatrics, and

other communities to prevent and respond to this significant public health and social justice problem. Similar to colleagues before us, we recommend the development of a comprehensive surveillance system to assess and track the scope of CSA. This system should be grounded by common definitional elements and draw from multiple indicators and sources to estimate the prevalence of a range of sexually abusive experiences. The fact that many different sectors (e.g., child protection, public health) already have a "stake" in CSA prevention and response provides an opportunity for a multi-sector, comprehensive approach to surveillance.

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