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TYPE: Article CC:CCG

JOURNAL TITLE: Trauma, violence & abuse

USER JOURNAL TITLE: Trauma, Violence,

ARTICLE TITLE: The Impact of Childhood Abuse on the Commercial Sexual Exploitation of Youth: A Systematic Review and Meta-Analysis

ARTICLE AUTHOR: De Vries, Ieke

VOLUME:

ISSUE:

MONTH:

YEAR: 2018

PAGES: 1524838018801332

ISSN: 1524-8380

OCLC #:

Processed by RapidX: 10/21/2018 12:31:01 PM



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# The Impact of Childhood Abuse on the Commercial Sexual Exploitation of Youth: A Systematic Review and Meta-Analysis

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## Abstract

Scholars and practitioners have drawn attention to the issue of commercial sexual exploitation (CSE) of minors, yet we continue to lack a clear understanding of which factors increase a minor's risk to this type of victimization. The current article reviews the literature about the impact of sexual, physical, or emotional abuse on the risk of CSE. The study utilizes quantitative meta-analytical techniques to estimate an overall impact of prior abuse. Nineteen studies were selected after a comprehensive search of electronic databases covering the fields of social science, criminology, psychology, or related fields. To be included in the analyses, all articles had to measure the direct impact of sexual, physical, and/or emotional abuse on minor's risk to CSE, utilizing multivariate techniques and presenting statistical metrics to assess the impact of prior abuse. Key findings demonstrate that sexual abuse considerably increases the risk of exploitation, especially among female youth in the United States. Physical and emotional abuse show negligible or no significant independent impacts, even though a few studies have begun to suggest that experiencing multiple types of childhood abuse may aggravate a risk of sexual exploitation. Our findings can guide further research on the impact of prior victimizations and inform screening instruments that are being developed to identify youth at risk of CSE.

## Keywords

child abuse, commercial sexual exploitation, revictimization, sexual assault, youth violence, sexual abuse

The commercial sexual exploitation (CSE) of minors is of increased concern to scholars and practitioners, as is demonstrated by the amount of literature exploring the vulnerabilities of youth to CSE and the range of anti-trafficking policies directed at the identification and protection of sexually exploited youth. In response to increased concerns, screening tools are being developed to identify youth who are at increased risk of sexual exploitation based on their previous experiences, current behavior, or demographics. Among the risk factors for such victimization, childhood abuse is deemed important by practitioners, yet rigorous evidence about whether and how much certain types of abuse increase the risk of sexual exploitation is lacking. The purpose of the current study is to provide a systematic review and meta-analysis of the literature addressing the impact of childhood abuse on CSE of youth.

Research on CSE suffers from a lack of clarity due to the different ways through which scholars and practitioners define the problem. It is therefore important to note that when CSE concerns minors, it has broadly been interpreted as “the sexual abuse or exploitation of a child for the financial benefit of any person or in exchange for anything of value (including monetary and non-monetary benefits) given or received by any person” (Development Services Group, 2014). Studies often use the terms CSE and sex trafficking interchangeably even though sex trafficking of minors is defined more narrowly as

the “recruitment, harboring, transportation, provision, or obtaining of a minor for the purpose of a commercial sex act” (Trafficking Victim Protections Act [TVPA], 2000, P.L. 106-386). Although the TVPA recognizes minors who are engaging in commercial sex (CS) acts as victims of sex trafficking even when there is no coercion, fraud, or force, the law did not fully encompass victimization types such as sexual exploitation or other abuse types, pornography, or sex tourism. Recent amendments to the TVPA, such as the Justice for Victims of Trafficking Act (JVTA, 2015, amending 18 U.S.C. 1591[a][1]), expanded on the definition of trafficking to also offer protection to minors engaging in these other sex acts. While recognizing other terminology utilized to address CSE of youth (e.g., transactional sex or juvenile prostitution), we utilize the term CSE because it captures a broad range of commercial and

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sexually victimizing experiences of youth that studies have analyzed.

Although both adults and minors have been identified as victims of CSE, scholars and practitioners tend to agree that minors are particularly vulnerable. This is in part because minors are less equipped to cope with childhood adversities and may have decreased resiliency or mental capacity to resist sexual victimizations compared to adults (Courtois, 2008; Lillywhite & Skidmore, 2006). Despite concerns about the vulnerabilities of minors, efforts to identify commercially sexually exploited youth are hindered by major gaps in our knowledge about the risk factors for this type of victimization. These difficulties exist in part because youth often do not disclose their victimization due to fear of retaliation by the exploiter, fear of criminal charges, attachment to the exploiter, self-blame, or fear of negative judgments (Andretta, Woodland, Watkins, & Barnes, 2016). In addition, the identification and reporting of CSE depends on the knowledge and experience of victim service agency workers, law enforcement, or other institutions involved in the identification of potential victims (Farrell, McDevitt, & Fahy, 2010; Mitchell, Finkelhor, & Wolak, 2010). Furthermore, youth may be identified for CSE-associated activities, such as loitering or running away, leaving CSE victimizations potentially unreported.

Because of the difficulties in identifying sexually exploited youth, it is important to understand the factors that may signal risk of CSE in order for at-risk youth to be detected and prevent future victimizations. Researchers have proposed factors that if possessed, may act as red flags and prompt investigations into a child's risk of exploitation. Numerous screening tools assessing such factors for both minors and adults have been developed. Examples are the Covenant House Human Trafficking Interview and Assessment Measure-14 (Bigelsen, 2013), the TVIT by the Vera Institute (Simich, Goyen, Powell, & Mallozzi, 2014), or the CSE Identification Tool of the WestCoast Clinic (Basson, 2017). Such tools help identify the risk of CSE or degree of victimization in order to develop appropriate responses and treatment plans. Although efforts are being made to validate screening tools, empirical research on a list of reliable risk factors remains in its infancy (Basson, 2017; Greenbaum, Dodd, & McCracken, 2018). As such, the screening tools service providers rely on may not be entirely accurate or comprehensive. As the utilization of screening tools to identify sexually exploited children becomes more commonplace within clinical settings and child welfare and criminal justice systems, the need for validation of CSE risk factors becomes increasingly vital.

One of the most-cited risk factors is a history of childhood abuse that occurred prior to CSE victimizations and can include sexual, physical, and emotional abuse experienced by a person under the age of 18. Childhood sexual abuse has been found to be the most prevalent risk factor in studies examining sexual exploitation of youth (Choi, 2015) and includes any acts in which children are used for sexual gratification, such as sexual molestation, rape, and sexual exploitation (English, 1998). Nonetheless, child physical abuse (Cobbina & Oselin, 2011;

Warf et al., 2013) and child emotional abuse are also frequently associated with trafficking (Estes & Weiner, 2005; Loza et al., 2010; Roe-Sepowitz, 2012; Saewyc & Edinburgh, 2010; Stoltz et al., 2007). Physical abuse is any act resulting in physical harm such as kicking, stabbing, or punching a child and examples of emotional abuse are verbal abuse or other acts encompassing the rejection, isolation, terrorization, ignorance, or corruption of a child (English, 1998). Myriads of other prior victimizations are also important though less explored in the literature, such as witnessed family violence (Cimino et al., 2017; Naramore, Bright, Epps, & Hardt, 2017; Reid, Baglivio, Piquero, Greenwald, & Epps, 2017), partner sexual coercion (Tyler, 2009), dating violence victimization (Patton et al., 2014), robbery and assault (Greene, Ennett, & Ringwalt, 1999), or a combination of adverse childhood experiences (Reid et al., 2017).

Prior meta-analyses have revealed how childhood abuse, especially sexual abuse, is associated with a variety of negative outcomes such as depression (Paolucci, Genuis, & Violato, 2001), HIV risk behavior (Arriola, Loudon, Doldren, & Fortenberry, 2005), or other long-term health consequences (Norman et al., 2012) and also increases the odds of risky sexual behaviors such as an early age of first sexual intercourse, having multiple partners, or having unprotected sex (Abajobir, Kisely, Maravilla, Williams, & Najman, 2017). To date, there is no meta-analysis assessing the impact of different types of abuse on increasing the risk of CSE among youth.

The current study is a meta-analysis that combines the pool of existing studies that examined the link between different types of abuse and CSE of youth with the aim to derive an average impact of these different types of child abuse. By providing an overview of research findings, this meta-analysis aims to advance the understanding of childhood abuse as an antecedent for CSE of youth. This study seeks to serve as a critical foundation for future research and can inform policy efforts directed at the early identification of minors at risk of CSE and the prevention of child trafficking. The next section reviews past literature on the impact of prior abuse on CSE of minors, followed by sections presenting the method and findings and a conclusion suggesting the potential impact for research, policy, and practice.

## Prior Literature

Most prior research on risk factors for CSE has been qualitative in nature, utilizing retrospective data gathered from interviews with exploited youth or professionals engaged in victim assistance services (see, for this argument, Reid & Piquero, 2016). Many of these studies have provided detailed accounts of histories of childhood abuse in addition to a myriad of other problems including caregiver dysfunction or abandonment, runaway situations, and substance abuse (Estes & Weiner, 2005; Farrow, 2005; Reid, 2012). In addition, risky sexual behaviors, such as having multiple sexual partners or unprotected sex, as well as peer involvement in CS activities have recurrently been associated with increased risk of CSE (Tyler,

Hoyt, Whitbeck, & Cauce, 2001; Wilson & Widom, 2010). The impact of these risk factors is now being supported by quantitative studies dominantly reporting on direct associations between a history of childhood abuse and subsequent CSE (see, for reviews, Clawson, Salomon, & Goldblatt Grace, 2006; Estes & Weiner, 2005).

### *Childhood Sexual Abuse*

Among the histories of childhood adversities, sexual abuse is generally considered to be a key antecedent to CSE. In fact, several studies have reported on sexual abuse as the strongest predictor for CSE, even after controlling for a range of different risk factors (Chohaney, 2016; O'Brien, Li, Givens, & Leibowitz, 2017; Reid et al., 2017). This impact of prior sexual abuse has especially been reported for female youth, in part because female youth are more often perceived to be subject to a continued gender-based violence compared to male youth. In addition, sexual abuse has been associated with negative reproductive and other physical health impacts that further aggravate the trauma resulting from sexual abuse. This also can put females at increased risk compared to males (Ahrens, Katon, McCarty, Richardson, & Courtney, 2012; Dunkle et al., 2004; Lavoie, Thibodeau, Gagne, & Hebert, 2010; Loza et al., 2010; McClanahan, McClelland, Abram, and Teplin, 1999; Saewyc, Solsvig, & Edinburgh, 2008; Walls & Bell, 2011). Other studies have reported stronger effects for risk factors other than sexual abuse, such as sexual risky behavior, runaway, substance abuse histories, or demographic characteristics (Kaestle, 2012; Lavoie et al., 2010; Marshall, Shannon, Kerr, Zhang, & Wood, 2010; Naramore et al., 2017; Okigbo, McCarragher, Chen, & Pack, 2014; Swahn, Culbreth, Salazar, Kasirye, & Seeley, 2016).

A few studies failed to find an association between prior sexual abuse and later experiences of CSE. Insignificant effects of sexual abuse were explained against the background of narrow operationalizations of sexual abuse that did not encompass all forms of sexual victimization (Reid & Piquero, 2014) or sexual abuse was interpreted as a potential antecedent of other CSE risk factors such as running away, substance abuse, poverty, or peer involvement in CS (Adjei & Saewyc, 2017; Fedina, Williamson, & Perdue, 2016; Klatt, Caver, & Egan, 2014; Reid & Piquero, 2014; Tyler, 2009).

The literature on repeat victimization can help explain the relationship between childhood sexual abuse and CSE. The traumatizing impact of childhood abuse can reduce resiliency and increase vulnerability to future victimizations that are similar, explaining a link between prior sexual abuse and future sexual victimizations. In addition, certain environmental factors or routine activities can continue to place previously abused youth in contexts of motivated offenders or push youth into contexts with less capable guardianship where opportunities for CSE victimizations can emerge (e.g., street life). Against this background, several studies have suggested that particularly non-White youth in disadvantaged communities are more exposed to opportunities to be sexually exploited,

though much more empirical research is needed to address vulnerabilities across different races and ethnicities (Reid & Piquero, 2014; Tyler, 2009).

In addition to the experience of similar types of victimizations at multiple points in time (Pease, 1998), prior victimizations have been put forward as explanatory factors for an increased risk of future victimizations even across different types of victimization (Hope, Bryan, Trickett, & Osborn, 2001; Lauritsen & Davis Quinet, 1995; Reiss, 1980). This could mean that physical and emotional abuse can further increase the odds of experiencing CSE through the processes of depressed coping mechanisms and decreased resiliency.

### *Childhood Physical Abuse*

Childhood physical abuse is widely considered as a potential antecedent of CSE and included as a risk factor on most screening and assessment instruments. Whereas studies highlight that the "association of physical abuse with CSE/trading sex is evident" (Klatt et al., 2014, p. 253), only a small number of studies have found independent effects of physical abuse on CSE among youth (Greene et al., 1999; Reid et al., 2017). In line with the literature on the relationship between physical abuse and later involvement in risky sexual behaviors (e.g., Johnson, Aschkenasy, Herbers, & Gillenwater, 1996; Rotheram-Borus, Mahler, Koopman, & Langabeer, 1996), Greene, Ennett, and Ringwalt (1999) reported increased odds to engage in CSE for youth who were physically abused in their childhood. In contrast, Reid, Baglivio, Piquero, Greenwald, and Epps (2017) reported negative effects of physical abuse in multivariate models while recognizing the positive relationship in bivariate analyses suggesting that "cumulative effects are complex and do not simply stem from an additive process" (p. 310). Various other studies found significant effects of physical abuse in bivariate analyses that disappeared once controlling for major risk factors like sexual abuse (Klatt et al., 2014; Marshall et al., 2010; Swahn et al., 2016). A few studies have alluded to a potentially different impact of physical abuse on experiencing CSE for females compared to males. Following these studies, male youth are more likely to report being physically abused and at increased risk to CSE (Adjei & Saewyc, 2017). The impact of physical abuse on the risk of CSE has not been assessed across different demographics like race and ethnicity.

### *Childhood Emotional Abuse*

Although most studies have focused on the effects of childhood sexual and physical abuse (Fedina, Williamson, et al., 2016), the role of emotional abuse in increasing the vulnerability of youth to CSE has recently received more attention. Emotional abuse can diminish confidence, self-worth, and the ability to cope in high-risk situations, increasing the risk to be sexually exploited (Loza et al., 2010; Roe-Sepowitz, 2012; Stoltz et al., 2007). In addition, studies have noted that when children are emotionally abused and neglected by their caretakers, they are

more likely to search for others to fill the need of protection and nurturing, making them vulnerable to exploitation by motivated offenders like pimps (Hildyard & Wolfe, 2002). Despite these concerns about the impact of emotional abuse, very few studies have found significant independent effects of emotional abuse on CSE. While most studies found that emotional abuse was more frequently reported among sexually exploited youth than nonsexually exploited youth (Klatt et al., 2014; Naramore et al., 2017; Reid et al., 2017), significant effects were found only in studies examining bivariate relationships or studies utilizing multivariate techniques but that did not control for the impact of sexual abuse (Greene et al., 1999; Loza et al., 2010). The impact of emotional abuse across different demographic groups has not been met with empirical validation.

### *The Overall Impact of Different Abuse Types on CSE*

While many studies have discussed the harmful impacts of sexual, physical, or emotional abuse, there is no meta-analysis providing an overall impact of these abuse types on CSE victimizations. The current meta-analysis evaluates whether sexual, physical, and emotional abuse increase the likelihood of CSE among youth or specific groups of youth (e.g., males vs. females). Although this study only assesses the independent impacts of each of the abuse types, it is important to note that different types of abuse may co-occur during childhood (Cecil & Matson, 2001; Dong et al., 2004; Kellogg & Menard, 2003; Meyerson, Long, Miranda, & Marx, 2002) or can be part of sequential victimization or childhood adversity patterns (Cobbina & Oselin, 2011; Nadon, Koverola, & Schludermann, 1998; Reid, 2011; Roe-Sepowitz, 2012; Silbert & Pines, 1981; Tyler et al., 2001).

As we have seen in prior literature, the experience of cumulative and co-occurring victimization types can reduce resiliency and damage mental health through post-traumatic stress disorder, depression, anxiety, low self-esteem, behavior disorders, and suicidal behavior (Appleyard, Egeland, Dulmen, & Alan Sroufe, 2005; Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Finkelhor, Ormrod, & Turner, 2007; Finkelhor, Ormrod, Turner, & Hamby, 2005; Finkelhor, Ormrod, Turner, & Holt, 2009; Rodriguez-Menés, Puig, & Sobrino, 2014; Turner, Finkelhor, & Ormrod, 2006). Studies have begun to suggest that experiencing multiple abuse types can increase vulnerability to later victimizations (Adjei & Saewyc, 2017; Finkelhor, Hotaling, Lewis, & Smith, 1990; Naramore et al., 2017; Ulloa, Salazar, & Monjaras, 2016), yet more research is needed before a meta-analysis can be conducted on the impact of such polyvictimization on CSE.

## **Method**

### *Identification of Studies and Study Selection*

We utilized multiple strategies to identify potentially eligible studies for the present analysis. First, the following electronic databases were systematically searched for relevant publications between the dates of June 2017 and December 2017: Web of Science, PsycLIT, PsycINFO, PubMed, Academic Search

Complete, Education Resources Information Center (ERIC), and Google Scholar. These databases were chosen to comprehensively cover the fields of social science, criminology, and psychology. The databases were searched using the age-descriptive terms "child," "minor," "adolescen\*," "youth," and "juvenile" combined with key words such as "commercial sexual exploitation," "sex traffic\*," "prostitut\*," "sex work," "survival sex," and "transaction\* sex."

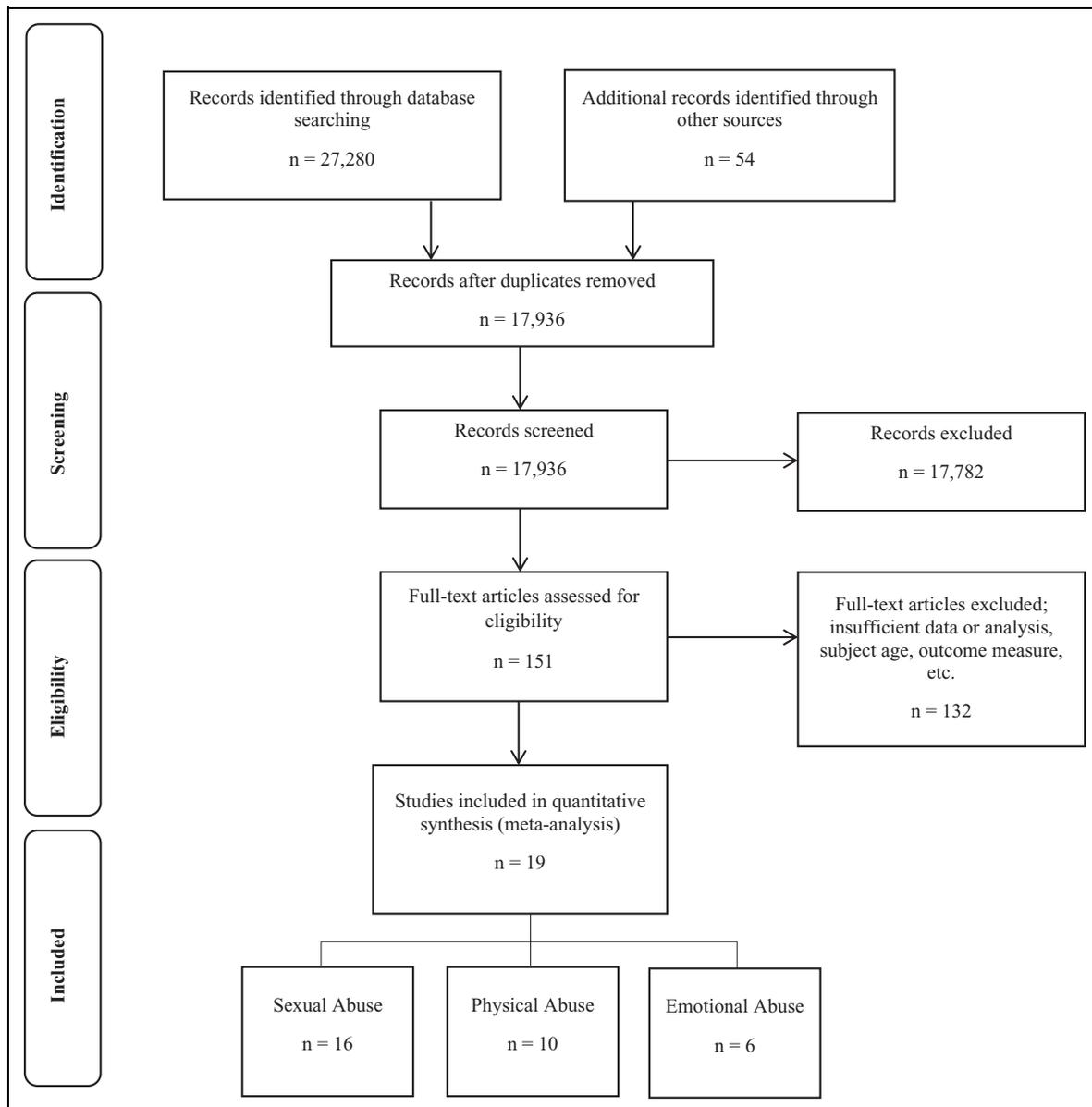
Next, we examined the literature reviews and references of all potential articles found through the database search to find relevant earlier studies. We also used forward citation searches using Google Scholar and relied on bibliographies of policy and service provider reports. In addition, contact with service providers and leading researchers resulted in the addition of studies that were not found through the search strategies. Altogether, our search resulted in the identification of 151 studies, published between the years 1981 and 2018, that addressed risk factors for CSE among youth utilizing qualitative, quantitative, or mixed methods.

### *Inclusion and Exclusion Criteria*

All studies had to meet the following criteria to be eligible for inclusion in the meta-analysis, which are also summarized in Figure 1 (see for reporting mechanisms on meta-analysis: Moher, Liberati, Tetzlaff and Altman, 2009). First, the outcome variable represented a form of CS or CSE of youth. As noted in the literature, youth exploited in commercial sex are labeled with a variety of terms including CSE, sex-trafficking victims, juvenile prostitutes, or youth engaging in survival sex (e.g., among runaway youth) and transactional sex (Reid, 2011). We included articles with these different labels to address potential differences between studies examining CS acts following a definition that approximates the CSE definition (coded as "CSE") and studies utilizing different terminology to address CS acts among minors, such as "survival sex" and "transactional sex" (coded as "CS").

Second, the impact of prior victimizations was analyzed. We included studies that examined victimization experiences such as sexual abuse, physical abuse, emotional abuse, molestation, and rape. A study was not included in the analyses if it did not specifically address the impact of childhood sexual, physical, or emotional abuse or if it combined multiple victimization types into a single category (e.g., experienced childhood sexual and/or physical abuse) of which independent impacts of each abuse type could not be assessed.

Third, the study sample included individuals that were minor at the time of the exploitation. Studies based on samples comprised of both minors and young adults were also included though the analyses assess whether the impact of prior abuse on CSE differs for samples comprised of minors only versus mixed samples comprised of both minors and young adults. In addition, studies with samples comprised of only young adults were included if questions were retrospective and captured experiences that likely occurred before the age of 18. For example, two studies asked participants between 18 or 19 and



**Figure 1.** Schematic overview of selection and inclusion strategy see for reporting mechanisms on meta-analysis: Moher, Lliberati, Tetzlaff and Altman, 2009).

26 years about their experiences earlier, some of whom could have experienced CSE before the age of 18 (Kaestle, 2012; Tyler, 2009). These studies were included to avoid an exclusion bias.

Fourth, the study employed multivariate statistical analytical techniques and was methodologically rigorous, which means that requisite data (effect size, confidence intervals [CIs], and significance levels) were reported in order to pool the data and calculate average effect sizes for specific abuse types. Inclusion was not dependent on the specific methodology (e.g., studies utilizing survey designs, interviews, or case reports were all included), but requisite data must be reported to calculate an effect size. If data presented were insufficient,

efforts were made to directly contact the author(s) for enquiry. Last, only studies that were peer-reviewed, published, and available in English were included.

The authors reviewed titles and abstracts of articles identified and weighed them against the inclusion criteria. If the information was insufficient to determine inclusion or exclusion, the full article was obtained. The final sample of the current meta-analysis includes 19 studies that met the inclusion criteria, comprised of a total of 23,983 individuals, 12,299 males (51.28%), and 11,684 females (48.72%). Among these studies, 16 addressed sexual abuse, 10 addressed physical abuse, and 6 addressed emotional abuse. Some of the studies mentioned in the preceding

literature review that shed light on the role of childhood adversities in increasing the risk of CSE did not meet the inclusion criteria and could therefore not be included in the following analysis.

### *Coding of Study Characteristics*

All studies selected for the meta-analysis were coded utilizing a classification sheet developed by the authors. The following information was captured for each article: author(s), year and journal, scope (international, national, local), operationalization of CSE, study design (methods, analytical technique, data source, and collection years), sample characteristics as far as available (sample size, population type, gender, and age), risk factors examined, and relevant statistics (coefficients, CIs, and significance levels). Overall, studies provided too little information on other sample characteristics like socioeconomic status, sexual orientation, or race and ethnicity and were therefore not included in the analyses. To contribute to interrater reliability, studies were coded by all authors of this study. Inconsistencies and ambiguities were discussed in meetings and occasionally the original authors of the studies were consulted for clarification.

Tables 1 and 2 report on the characteristics of the studies included in the current meta-analysis. The included studies were published between the years of 1999 and 2017, which covers all articles that meet the inclusion criteria and were published before the end of our data collection. Eleven studies were concerned with CS and sexual exploitation in the United States, while eight were conducted abroad in Canada, the United Kingdom, Mexico, sub-Saharan Africa, Liberia, Norway, and Sweden. Most studies sample at-risk populations, such as runaway, homeless, and juvenile justice-involved youth. Only three studies utilized generalizable samples of youth. The vast majority of articles ( $n = 16$ ) included both males and females in their samples, among which four studies reported effect sizes for males and females separately.

Because of the variety of terms and definitions used to describe CSE, the selected studies vary in how the outcome variable was defined. Even so, the use of different labels seems to be a conceptual difference between studies rather than a methodological one. As can be observed in Table 1, while authors referred to their outcome measures utilizing different terminology, studies commonly share an operationalization of the outcome measure that focuses on the CS act (e.g., "Have you ever exchanged sex for money, gifts, drugs, shelter, or other needs?").

The independent variable of interest in the current meta-analysis was a history of childhood abuse. Relevant articles reported on a wide range of victimization experiences, which were ultimately narrowed down to three forms: sexual abuse, physical abuse, and emotional abuse. Sexual abuse was operationalized as rape, molestation, sexual touching, and having sex with adults. Physical abuse included violent acts such as being hit, slapped, kicked, beat, attacked with a weapon, and threatened to be hurt physically. Emotional abuse included the

use of harsh words, manipulation, humiliation, and being hurt emotionally. These different abuse types were measured as occurring prior to entry in CS although studies were generally unclear about the time gap between abuse and the CSE. Although three studies employed a longitudinal design that is required to make causal claims (Ahrens et al., 2012; Kaestle, 2012; Reid & Piquero, 2014), all other studies were cross-sectional and analyzed prior abuse and subsequent CSE victimizations retrospectively.

### *Analytical Strategy*

Meta-analytic techniques were used to determine the overall strength and statistical significance of sexual, physical, and emotional abuse. Studies typically employed logistic regression techniques on a binary outcome measure that represented if youth had ever engaged in CS or had ever been sexually exploited. Therefore, our main measure of effect size was the odds ratio (*OR*). An *OR* was interpreted as the change in the likelihood of engaging in CS or being sexually exploited as a youth associated with a one-unit change in the independent variable (experiencing abuse compared to not experiencing abuse). Consistent with Hawker and Boulton (2000), the effect sizes of studies utilizing different analytical techniques (e.g., multinomial logistic regression) were transformed to our main effect size metric utilizing data provided in the studies. In line with common meta-analytic techniques, we weighted study effect sizes by variance of the effect size as well as sample size.

We analyzed composite weighted effect sizes based on the inverse of variance utilizing both fixed-effects and random-effects models. Random-effects models result in greater generalizability as they account for both random variability and variability in effects across the studies but tend to be biased when the number of included studies is small. Fixed-effects models address any potential systematic error of each study's included effect size (Borenstein, Hedges, Higgins, & Rothstein, 2010). In recognition of the small number of studies, we present findings from the fixed-effects models. No large differences were found between our fixed-effects and random-effects models. Findings are presented in forest plots that include the weighted mean estimates for each study with 95% CIs in addition to the key metrics for each individual study (*ORs*, CIs, significance level, and study weights). All main analyses compare the effects of sexual, physical, or emotional abuse. When studies included several measures of a specific abuse type (e.g., sexual molestation and sexual harassment), we included the mean of the *ORs* of all measures and ran additional analyses with each measure separately included. This did not result in substantially different mean effect sizes of any of the abuse types (Borenstein et al., 2010).

To further assess the rigor of our findings, we performed heterogeneity tests to examine the distribution of effect sizes. A heterogeneous distribution implies that there is inconsistency across the studies, for example, due to systematic differences in study design and sample characteristics. Common to most

**Table 1.** Summary of Included Studies.

S. No.	Author (Year)	Study Location	Data Source (Date)	Operationalization Outcome Measure	Terminology	Commercial Sexual Exploitation (CSE)/Commercial Sex (CS) Coding	Sexual Abuse	Physical Abuse	Emotional Abuse
1	Adjei and Saewyc (2017)	Sub-Saharan Africa	National Survey of Adolescents (2004) <sup>a</sup>	“Have you received something from someone for having sex during the past 12 months?”	Sex in exchange for money/ material Transactional sex	CS	X	X	
2	Ahrens, Katon, McCarty, Richardson, and Courtney (2012)	United States	Midwest Study (2000–2010) <sup>b</sup>	“Have you ever had sex for someone who paid you to do so?”	Transactional sex	CS	X	X	
3	Chohaney (2016)	United States	Ohio Human Trafficking Commission (2011) <sup>c</sup>	“Affirmed they were forced into sex work and were currently younger than 18 years old, or affirmed they were minors in both of the following categorical questions: ‘At what age did you first receive money for sexual services?’ and ‘At what age did you first sell sexual services?’”	Minor sex trafficking	CSE	X		
4	Fedina, Howard, Wang, and Murray (2016)	United States	Author-designed survey (2011)	“Were you over the age of 18 or under the age of 18 when you first got involved in selling sexual services?” (1 = under the age of 18, 0 = participants above the age of 18 who did not experience force in the commercial sex industry, adult sex-trafficking victims were excluded)”	Domestic child sex trafficking	CSE	X		X
5	Greene, Ennett, and Ringwalt (1999)	United States	Author-designed survey (1992)	“Have you ever had sex with someone to get money, food, a place to stay, or something else you wanted?”; “Have you ever had sex with someone to get drugs or money to buy drugs?”	Survival sex	CS		X	X
6	Haley, Roy, Leclerc, Boudreau, and Boivin (2004)	United States	Author-designed survey (2001)	“Have you ever exchanged sex for money, gifts, drugs, shelter, or other needs?”	Survival sex	CS	X		
7	Kaestle (2012)	United States	National Longitudinal Study of Adolescent Health (Add Health) (1994–2002)	“Have you ever had sex with someone who paid you to do so?”	Selling sex	CS	X	X	
8	Klatt, Cavnar, and Egan (2014)	United Kingdom	Author-designed survey (2014)	Combined measure of CSE (Disclosed involvement in situations, contexts, and relationships where they received something as a result of them performing sexual activities) and trading sex (disclosed performing sexual acts to acquire money, food, drugs, or lodging)	CSE/trading sex	CS	X	X	X

(continued)

S. No.	Author (Year)	Study Location	Data Source (Date)	Operationalization Outcome Measure	Terminology	Commercial Sexual Exploitation (CSE)/Commercial Sex (CS) Coding		
						Sexual Abuse	Physical Abuse	Emotional Abuse
9	Lavoie, Thibodeau, Gagne, and Hebert (2010)	Canada	Author-designed survey (2006)	“Have you ever received something (money, drugs, alcohol, gifts, or other) in exchange for sexual contact (touching, oral sex, intercourse, or another activity of sexual nature)?”	Selling sex	X		
10	Loza et al. (2010)	Mexico	Author-designed survey (2004–2006)	Trading sex for drugs, money, or other material benefit before the age of 18	Sex work			X
11	Marshall, Shannon, Kerr, Zhang, and Wood (2010)	Canada	At-Risk Youth Study (2005–2007) <sup>d</sup>	“In the last 6 months, have you received money, drugs, shelter, food, or gifts in exchange for sex?”	Survival sex work	X	X	
12	Naramore, Bright, Epps, and Hardt (2017)	United States	Author-designed survey (2005–2012)	Section 2e: “It is unlawful to offer to commit, or to commit, or to engage in, prostitution, lewdness, or assignation”; Section 2h: “It is unlawful to aid, abet, or participate in any of the acts or things enumerated in this subsection,” where the subsection refers to “committing or facilitating prostitution, or to visiting a prostitute”	Charged with offense related to sex trafficking	X	X	X
13	O'Brien, Li, Givens, and Leibowitz (2017)	United States	Author-designed survey (2004–2009)	Before I was arrested, I was paid to have sexual relations with someone	Domestic Minor Sex Trafficking (DMST)	X		
14	Okigbo, McCarraher, Chen, and Pack (2014)	Liberia	Author-designed survey (2011)	“Have you ever received money, food, clothing, shelter, school fees, drugs, or liquor in exchange for sex?”	Transactional sex	X		
15	Pedersen and Hegna (2003)	Norway	Young in Oslo Project (1996) <sup>e</sup>	“Have you given sexual favors for payment?”	Sex sale		X	
16	Reid and Piquero (2014)	United States	Pathways to Desistance (2000–2010) <sup>f</sup>	“Have you been paid by someone for having a sexual relationship with them?”	Commercial sex	X		
17	Reid, Baglivio, Piquero, Greenwald, and Epps (2017)	United States	FDJJ data (2007–2015) <sup>g</sup>	Presence of a human trafficking abuse report accepted by the Florida Abuse Hotline between 2009 and 2015	Human trafficking abuse	X	X	X
18	Swahn, Culbreth, Salazar, Kasirye, and Seeley (2016)	Uganda	Kampala Youth Survey (2014)	“Are you currently engaged in commercial sex work?”	Commercial sex work	X	X	
19	Tyler (2009)	United States	Homeless Young Adult Project (2004–2005) <sup>h</sup>	“Have you ever traded sex in return for something, such as money, a place to stay, or drugs?”	Traded sex	X		

<sup>a</sup>Awusabo-Asare, Biddlecom, Kumi-Kyereme, and Patterson (2006). <sup>b</sup>Courtney, Terao, and Bost (2004) and Mulvey (2012). <sup>c</sup>Williamson, Perdue, Belton, and Burns (2012). <sup>d</sup>Wood, Stoltz, Montaner, and Kerr (2006). <sup>e</sup>Pedersen and Skrondal (1999) and Pedersen and Skrondal (1999). <sup>f</sup>Mulvey (2012). <sup>g</sup>This is data collected and utilized by Reid et al. (2017) from the Florida Department of Juvenile Justice (FDJJ). <sup>h</sup>Tyler, Johnson, Gripenstroh, and Bersani (2005).

**Table 2.** Sample Characteristics by Included Study.

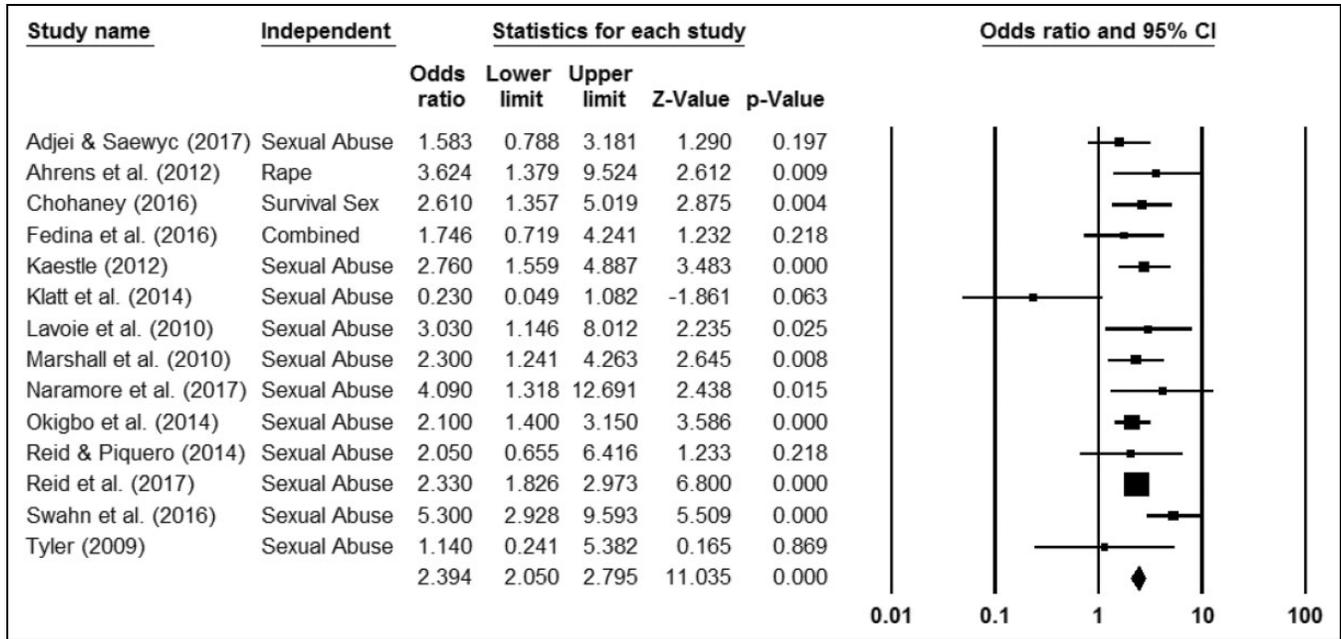
S. No.	Author (Year)	Population	Sample Size	N (%) Female	Separate Analysis for Males/Females?	Sample Age-Group at Time of CS/CSE
1	Adjei and Saewyc (2017)	Sexually active unmarried youth	1,677	694 (41.38)	Yes	Minors <sup>a</sup>
2	Ahrens, Katon, McCarty, Richardson, and Courtney (2012)	Youth transitioning out of foster care	574	314 (54.7)	Yes	Minors and young adults
3	Chohaney (2016)	Street-based sex workers	328	232 (70.7)	No	Minors
4	Fedina, Howard, Wang, and Murray (2016)	Age 16+ in sex industry	238	173 (72.5)	No	Minors
5	Greene, Ennett, and Ringwalt (1999)	Runaway and homeless youth	528 <sup>b</sup>	206 (39)	No	Minors and young adults
6	Haley, Roy, Leclerc, Boudreau, and Boivin (2004)	Street active male youth	533	0 (0)	No	Minors and young adults
7	Kaestle (2012)	Seventh- to 12th-grade students	12,240	6,169 (50.4)	No	Minors and young adults
8	Klatt, Cavner, and Egan (2014)	CSE program attendees	175	164 (93.9)	No	Minors and young adults
9	Lavoie, Thibodeau, Gagne, and Hebert (2010)	Eleventh- and 12th-grade students	815	465 (57.1)	No	Minors <sup>c</sup>
10	Loza et al. (2010)	Self-identified female sex workers in border towns	920	920 (100)	No	Minors <sup>d</sup>
11	Marshall, Shannon, Kerr, Zhang, and Wood (2010)	Street-involved youth	558	178 (31.9)	No	Minors and young adults
12	Naramore, Bright, Epps, and Hardt (2017)	Adjudicated youth charged with trafficking offense	204	86 (84.3)	No	Minors <sup>e</sup>
13	O'Brien, Li, Givens, and Leibowitz (2017)	Adjudicated, residentially based male youth	800	0 (0)	No	Minors <sup>f</sup>
14	Okigbo, McCarraher, Chen, and Pack (2014)	Youth identified at "high-risk locations" such as bars and brothels	493	493 (100)	No	Minors and young adults
15	Pedersen and Hegna (2003)	Eight- to 10th-grade students	148	32 (21.6)	Yes	Minors
16	Reid and Piquero (2014)	Adolescents convicted of serious offense	1,185	170 (14.3)	No	Minors <sup>g</sup>
17	Reid, Baglivio, Piquero, Greenwald, and Epps (2017)	Juvenile justice involved youth	1,826	1,601 (87.7)	Yes	Minors
18	Swahn, Culbreth, Salazar, Kasirye, and Seeley (2016)	Youth participating in a drop-in center for disadvantaged street and slum youth	590	347 (58.8)	No	Minors
19	Tyler (2009)	Homeless young adults	151	55 (36)	No	Minors and young adults

<sup>a</sup>Adjei and Saewyc (2017) also ran separate analyses for adults. <sup>b</sup>Greene, Ennett, and Ringwalt (1999) ran separate analyses for youth identified on the street versus in shelters. The shelter sample ( $n = 631$ ) was excluded from the main analysis and analyses with the street sample included instead did not result into noteworthy differences in the overall weighted impacts. <sup>c</sup>The sample age range was 15–18 years, which for the purposes of this study was still considered a sample of minors. <sup>d</sup>The complete sample also includes young adults, but the outcome measure in this study is binary representing underage entry into commercial sex (CS). <sup>e</sup>While some study participants were older than 18 years at the time of being surveyed, the authors only considered adjudication for sex trafficking as a minor. <sup>f</sup>This study's sample age range was up to 20 years but the dependent variable was specified to only cover trafficking as a minor. <sup>g</sup>This captures the group of individuals who were involved in commercial sexual exploitation (CSE) prior to the age of 16 compared to those who did not experience CSE. Reid and Piquero (2014) also compared late starters versus early starters which falls outside of the scope of the current study.

meta-analyses, we evaluated Cochran's  $Q$  for each model, which represents the summed squared deviations of each study's weighted effect from the weighted mean effect.  $I^2$  is another commonly used statistic and indicates the percentage of the dispersion in effects that can be attributed to heterogeneity (Higgins, Thompson, Deeks, & Altman, 2003). These heterogeneity tests also help identify whether effect sizes are

different across different sample groups such as samples comprised of only minors versus samples comprised of both minors and young adults (when questions were asked retrospectively at an older age), females versus males, or youth served by a victim service agency versus other youth.

Last, we employed the "trim-and-fill" procedure along with Egger's test to address potential publication bias, which may



**Figure 2.** Forest plot of the distribution of effect sizes of sexual abuse. Fixed effects reported. Ahrens, Katon, McCarty, Richardson, and Courtney (2012) ran separate analyses for the impact of rape and sexual molestation. An analysis with either independent variable did not substantively change the overall impact. Fedina, Williamson & Perdue (2016) examined the impact of rape in addition to sexual abuse in one model. In accordance with common meta-analytical techniques, the mean of the effect sizes of all measures was included for these studies. The weighted mean odds ratios were reassessed with each effect size separately included but this did not result in substantial changes of the overall effect sizes. Confidence intervals may deviate slightly from the original studies due to rounding effects.

arise when studies are more likely to report on significant as opposed to insignificant findings (Borenstein et al., 2010; Duval & Tweedie, 2000). All computations were performed with the Comprehensive Meta-Analysis program (Version 2.2; Borenstein, Rothstein, & Cohen, 2000).

**Findings From the Meta-Analysis**

In the following, we report on the effect sizes for the different abuse types, starting with the impact of sexual abuse. All main analyses in this article include studies that examined the impact of a specific abuse type among a female sample or a sample comprised of both females and males (e.g., based on national surveys). Studies that ran additional analyses for samples with males only are considered in further analyses assessing effect sizes across different groups.

**Sexual abuse.** Figure 2 is a forest-plot graph that summarizes the results of the 14 studies that addressed the impact of sexual abuse. Two studies exclusively looked at the impact of sexual abuse among a male sample (Haley, Roy, Leclerc, Boudreau, & Boivin, 2004; O’Brien et al., 2017). For purposes of comparability, these studies are excluded from the main analyses but included in moderator analyses that address differences in effect sizes for males versus females. Overall, sexual abuse was associated with a 2.394 times greater likelihood of engaging in CS or being sexually exploited as a minor (95% CI [2.050, 2.795]). Although this overall effect

is significant, five studies reported insignificant effects of sexual abuse (Adjei & Saewyc, 2017; Fedina, Howard, Wang, & Murray, 2016; Klatt et al., 2014; Reid & Piquero, 2014; Tyler, 2009).

While there was no significant evidence that the distribution of the studies that looked at the impact of sexual abuse on CS/CSE was heterogeneous ( $Q = 21.036, df = 14, p = .072, I^2 = 38.200$ ), the heterogeneity measures suggest that about 38.2% of the dispersion in effect sizes may still be attributed to conceptual or methodological differences across studies.

To identify potential factors that could cause differences in effect sizes, we ran several moderator analyses. The findings are presented in Table 3. As follows from the between-group heterogeneity metrics, any difference in effect sizes can be attributed to differences between male and female samples ( $Q = 79.739, df = 2, p = .000$ ). Sexual abuse has a stronger impact on the likelihood to engage in CSE among female youth ( $OR = 2.280, 95\% CI [1.819, 2.859]$ ) compared to male youth ( $OR = 1.162, 95\% CI [1.108, 1.218]$ ). However, the effect for the male youth sample is highly heterogeneous itself ( $Q = 46.610, df = 4, p = .000, I^2 = 91.418$ ), suggesting that these studies strongly differ in substantial and/or methodological ways. The between-group heterogeneity statistics for the other moderators do not suggest any other substantive or methodological differences in effect sizes. Nonetheless, the ORs for subgroups with significant  $Q$  values and high  $I^2$  values indicate that there may be some heterogeneity in study design within those specific subgroups. This is the case for studies providing

**Table 3.** Moderator Analyses for the Impact of Sexual Abuse on CSE.

Subgroup	<i>n</i>	OR [95% CI]	<i>p</i>	<i>Q</i>	<i>I</i> <sup>2</sup>
Outcome					
CSE	6	2.256 [1.826, 2.786]	.000	10.021, <i>df</i> = 5, <i>p</i> = .075	50.106
CS	8	2.565 [2.042, 3.223]	.000	10.357, <i>df</i> = 7, <i>p</i> = .169	32.414
Between-group heterogeneity				.657, <i>df</i> = 1, <i>p</i> = .418	
Gender <sup>a</sup>					
Both	12	2.535 [2.055, 3.126]	.000	19.353, <i>df</i> = 11, <i>p</i> = .055	43.160
Female	3	2.280 [1.819, 2.859]	.000	1.953, <i>df</i> = 2, <i>p</i> = .0377	0.000
Male	5	1.162 [1.108, 1.218]	.000	46.610, <i>df</i> = 4, <i>p</i> = .000	91.418
Between-group heterogeneity				79.739, <i>df</i> = 2, <i>p</i> = .000	
Age at time of CS/CSE					
Minor	7	2.473 [2.041, 2.996]	.000	9.029, <i>df</i> = 6, <i>p</i> = .172	33.550
Minor/young adults	7	2.251 [1.730, 2.928]	.000	11.685, <i>df</i> = 6, <i>p</i> = .069	48.654
Between-group heterogeneity				.321, <i>df</i> = 1, <i>p</i> = .571	
Sample group					
Criminal justice system	3	2.374 [1.880, 2.997]	.000	.973, <i>df</i> = 2, <i>p</i> = .615	0.000
Service agency	3	3.566 [2.205, 5.766]	.000	13.757, <i>df</i> = 2, <i>p</i> = .001	85.462
Other	8	2.203 [1.750, 2.772]	.000	3.159, <i>df</i> = 7, <i>p</i> = .870	0.000
Between-group heterogeneity				3.147, <i>df</i> = 2, <i>p</i> = .207	
Sample size					
<500	5	1.927 [1.416, 2.623]	.000	8.728, <i>df</i> = 4, <i>p</i> = .068	54.171
>500	9	2.576 [2.153, 3.082]	.000	9.769, <i>df</i> = 8, <i>p</i> = .282	18.106
Between-group heterogeneity				2.539, <i>df</i> = 1, <i>p</i> = .111	
Country					
United States	8	2.414 [1.988, 2.931]	.000	3.347, <i>df</i> = 7, <i>p</i> = .851	0.000
Other	6	2.359 [1.823, 3.052]	.000	17.669, <i>df</i> = 5, <i>p</i> = .003	71.702
Between-group heterogeneity				.019, <i>df</i> = 1, <i>p</i> = .889	

Note. CSE = commercial sexual exploitation; CS = commercial sex; OR = odds ratio; CI = confidence interval.

<sup>a</sup>The sum of the number of studies examining effects across gender differs from the main analysis. This is because Ahrens, Katon, McCarty, Richardson, and Courtney (2012) ran separate analyses for the three gender samples (both, female, and male) and is included 3 times in the above table. Similarly, Adjei and Saewyc (2017) and Reid, Baglivio, Piquero, Greenwald, and Epps (2017) ran separate analyses for both female and male samples and are therefore included twice.

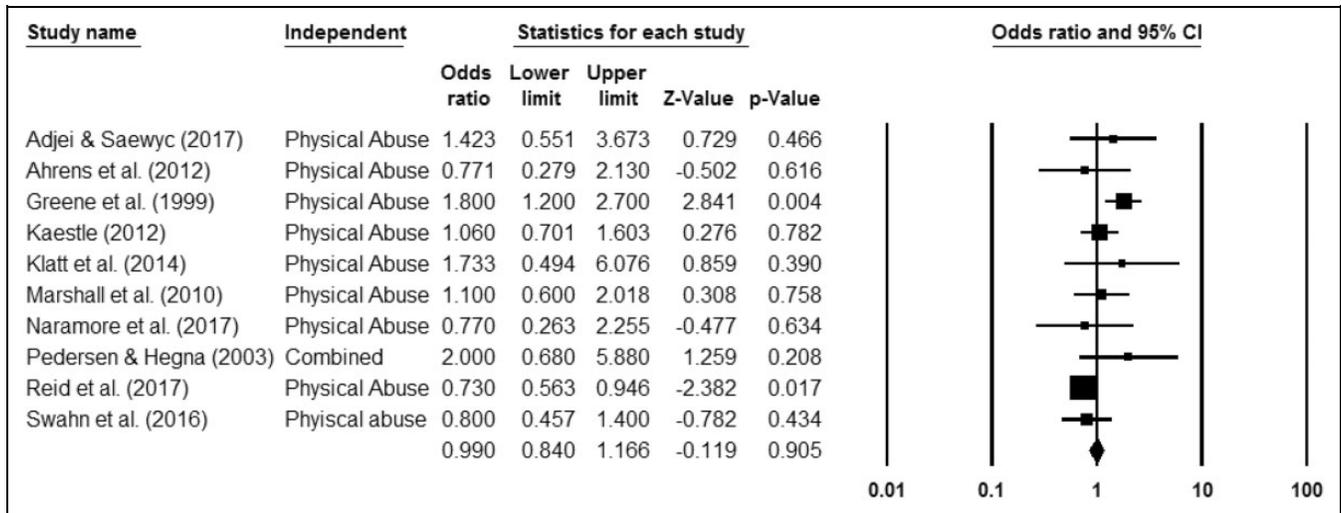
estimates for youth served at a service agency and for studies conducted outside the United States. We also ran the analysis while excluding studies that measured the impact of sexual abuse on CS/CSE in countries that face substantial degrees of war or violence. Sexual abuse rates are higher in these countries and the impact of sexual abuse on CSE may therefore be different. However, excluding these studies from the main analyses results in a similar impact as before ( $OR = 2.346$ , 95% CI [1.958, 2.811]).

Following the analyses, we can put most trust in studies that looked at female or mixed samples in the United States, with youth who are not served by a service agency. The effect for this group is almost equal to the effect for the overall group; sexual abuse increases the risk to be commercially sexually exploited as a youth by a factor of 2.285 (95% CI [1.940, 2.692]).

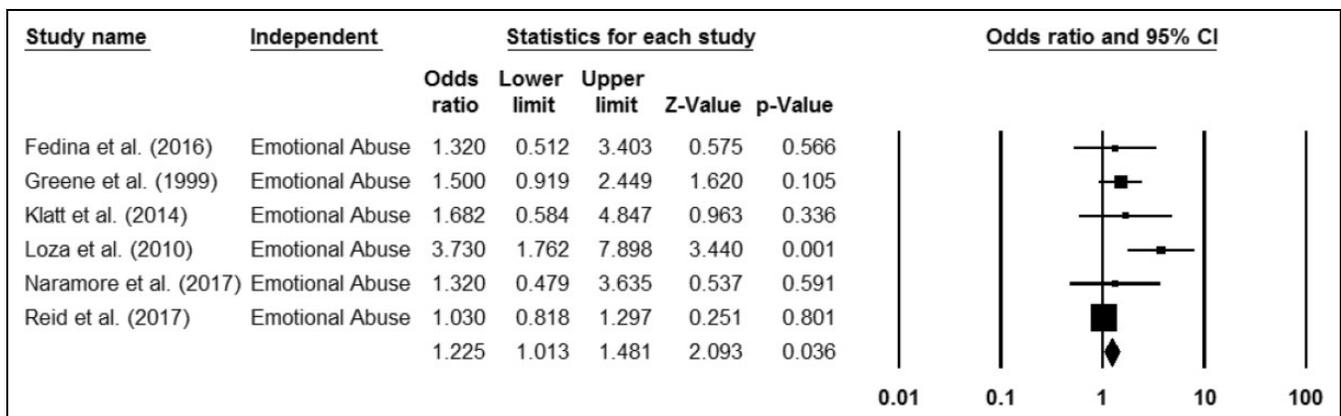
**Physical abuse.** Figure 3 is a forest-plot graph that summarizes the results of the 10 studies that measured the impact of physical abuse on CSE of youth. Contrary to the impact of sexual abuse, there is no significant weighted mean effect of physical abuse ( $OR = .990$ , 95% CI [.840, 1.166],  $p = .905$ ). Among these included studies, only two studies reported significant though contrary effects. Specifically, Greene et al. (1999)

reported that physical abuse increased the likelihood to engage in CS among runaway and homeless youth with a factor of 1.800 (95% CI [1.200, 2.700]). In contrast, Reid et al. (2017) reported a decreased likelihood of minors to be sexually exploited due to physical abuse, with a factor of 0.730 (95% CI [.563, .946]). The different study designs of both groups of researchers may explain these contradictory findings. The overall heterogeneity statistics suggest that substantive and methodological differences between studies may cause differences in effect sizes ( $Q = 17.848$ ,  $df = 9$ ,  $p = .037$ ,  $I^2 = 49.574$ ).

To further examine what causes heterogeneous distributions, we computed the weighted average effect sizes by the same moderators as before (available upon request). It appears that differences in effect sizes can be attributed to mainly differences in how the outcome measure was defined or operationalized ( $Q = 8.131$ ,  $df = 1$ ,  $p = .004$ ), whether the sample was comprised of females, males, or both ( $Q = 6.174$ ,  $df = 2$ ,  $p = .046$ ), whether the sample included minors only or both minors and adults ( $Q = 7.393$ ,  $df = 1$ ,  $p = .007$ ), and the type of sample group ( $Q = 9.891$ ,  $df = 2$ ,  $p = .007$ ). Two studies primarily contribute to this heterogeneity. The study by Greene et al. (1999) found a positive impact of physical abuse on the risk of CSE in relation to a sample comprised of both minors and



**Figure 3.** Forest plot of the distribution of effect sizes of physical abuse. Fixed effects reported. The study by Pederson and Hegna (2003) included several measures of physical abuse: mild, moderate, and severe. The table reports the mean effect but the weighted mean effect size was also computed with each of the levels of physical abuse included in separate analyses. This did not result in substantial different overall effect sizes. Confidence intervals may deviate slightly from the original studies due to rounding effects.



**Figure 4.** Forest plot of the distribution of effect sizes of emotional abuse. Fixed effects reported.

young adults. In contrast, Reid et al. (2017) found a decreased likelihood to be sexually exploited among juvenile justice-involved youth with a history of childhood physical abuse.

**Emotional abuse.** Last, Figure 4 is a forest plot of the six studies that measured the impact of emotional abuse on the risk of CSE. Although emotional abuse seems to be associated with an overall 1.225 increased likelihood to engage in these activities (95% CI [1.013, 1.481]), this finding may be misleading as there was only one study in total that found a significant and strong association between emotional abuse and CSE. Although the heterogeneity statistics suggest that there is a heterogeneous distribution of the studies looking at emotional abuse ( $Q = 11.684, I^2 = 57.205, df = 5, p = .039$ ), it is obvious that any heterogeneity that could cause a difference in effect can be attributed to the study by Loza et al. (2010). Following moderator analyses (available upon request), study characteristics that were significantly associated with heterogeneity in

effect sizes were the terminology utilized for outcome measures (positive effect for “CS”), type of sample group (positive effect for welfare system involved youth), and country where the study was conducted (positive effect for when the study was conducted outside the United States). This represents the study by Loza et al. (2010), which examined initiation of CS as a minor among self-identified females in border towns in Mexico. Excluding this study from the meta-analysis results in an overall insignificant effect of emotional abuse on CSE ( $OR = .933, 95\% CI [1.135, 1.381]$ ). In addition to the study by Klatt, Cavnar, and Egan (2014) that utilized a combined measure capturing both emotional abuse and neglect, four studies tested the impact of emotional neglect on the risk of CSE/CS (Ahrens et al., 2012; Kaestle, 2012; Naramore et al., 2017; Reid et al., 2017). The overall impact of neglect is significant, yet small ( $OR = 1.367, 95\% [1.128, 1.656]$ ), and the significance can be entirely attributed to one study by Reid et al. (2017) that examined emotional neglect among justice-involved youth.

## Robustness Checks

Because all studies were published, there is a risk of publication bias (Rothstein, 2008). Egger's tests were conducted to statistically test for publication bias (Borenstein et al., 2010). An Egger's regression intercept that is further removed from zero refers to more asymmetry in study effects. Overall, Egger's tests did not reveal statistically significant publication bias for any of the abuse types. Bias coefficients were  $-4.405$  ( $p = .567$ ),  $1.348$  ( $p = .216$ ), and  $1.672$  ( $p = .146$ ) for sexual, physical, and emotional abuse, respectively.

## Discussion

Our meta-analyses demonstrate the extent to which childhood victimization impacts a child's vulnerability to CSE. We found that youth with a history of sexual abuse were almost 2.5 times more likely to have been sexually exploited. Although we did not find an overall significant effect for physical or emotional abuse, we believe this could be due to their individual impact being accounted for by the more sizable effect of sexual abuse due to the relationship between different types of abuse that is frequently cited (Fergusson, Boden, & Horwood, 2008). For example, in one qualitative study, Chiu et al. (2013) found considerable overlap of sexual, physical, and emotional abuse in both male and female youth samples.

Substantive and methodological differences between studies were associated with different effect sizes across groups. Most evidently, we found a stronger impact of sexual abuse on the likelihood to be commercially sexually exploited for female youth compared to male youth. This difference in effect for female versus male youth comports with prior literature on the gendered effects of childhood sexual abuse. Childhood sexual abuse is more frequently reported as a significant and substantially stronger risk factor for sex trafficking among girls compared to boys (Ahrens et al., 2012; McClanahan et al., 1999; Saewyc et al., 2008; Walls & Bell, 2011; Widom & Kuhns, 1996; Wilson & Widom, 2008). A similar finding for risky sexual behaviors generally was found in a meta-analytical review by Abajobir, Kisely, Maravilla, Williams, and Najman (2017). The authors found that childhood abuse increased the odds of risky sexual behaviors such as early age of first sexual intercourse, practicing unprotected sex, having sex with strangers or multiple partners, sexual partner violence, and CS and more so for females ( $OR = 2.72$ ) than males ( $OR = 1.69$ ). It follows that our finding of a stronger impact of childhood sexual abuse on the CSE for females than males needs to be interpreted in light of a generally stronger impact of sexual abuse on risky sexual behaviors among females. While more research examining the mechanisms underlying gendered effects of prior abuse is needed, the present effect may be explained by patterns of gender-based sexual violence to which women have an increased vulnerability. As noted in several studies, female youth who are sexually abused may find themselves in an environment where they continue to be vulnerable to such gender-based violence (Ahrens et al., 2012; Dunkle et al.,

2004; Lavoie et al., 2010; Loza, 2010; McClanahan et al., 1999; Saewyc et al., 2008; Walls & Bell, 2011).

Regarding males, childhood sexual abuse has been associated with earlier age of initiation into CS, though studies suggest that this occurs with less frequent involvement of traffickers (Curtis, Terry, Dank, Dombrowski, & Khan, 2008; Flowers, 2001; Mitchell et al., 2010). However, other studies suggest that the risk factors associated with CSE are similar for both sexes (Edwards, Iritani, & Hallfors, 2006). This seems to be confirmed by a qualitative study of Cole (2018) that relied on the experiences of service providers working solely with male or female victims to argue that the role of prior abuse in subsequent victimization experiences do not substantively differ for male and female victims. It is also possible that CSE more often goes unreported if it concerns males or that men are less likely to be seen as victims by themselves or others on the basis of which an impact of sexual abuse on subsequent sexual victimizations may be harder to detect (Adjei & Saewyc, 2017; Curtis et al., 2008).

We found more heterogeneity in effect sizes for studies looking at the impacts of physical or emotional abuse, even though the overall independent impacts of these abuse types remain negligible. The small number of studies examining the impact of physical or emotional abuse on CSE risk makes even slight differences in study design and characteristics a more pertinent problem for heterogeneity in effect sizes. As was mentioned earlier, differences in effect sizes between studies examining physical or emotional abuse may be attributed to one or a few articles that differed methodologically and substantively. These study differences complicate the measuring of an overall effect on vulnerability to CSE and suggest that different groups can be impacted by childhood victimization differently.

## Implications for Practice, Policy and Research

Whereas heterogeneity in study designs and characteristics limits our ability to draw generalizable conclusions about the role of childhood abuse in increasing risk to CSE, our findings point to important aspects in prior literature that merit attention in future research and policy. Most pertinent is the importance of sexual abuse as a key risk factor for CSE of youth and its different effects for females compared to males. This is helpful information for victim service agencies that need to address childhood sexual abuse in programs directed at the prevention and combating of sexual victimization types. The finding also calls for more research seeking to understand why the impact of sexual abuse is lower among males and which other factors put male youth at risk of CSE.

Additionally, future research should examine the impact of childhood abuse across different samples than those that could be addressed in the current study. While our findings present a stronger impact of sexual abuse on the risk of sexual exploitation among female youth compared to male youth, less is known about the role of childhood abuse as a risk factor for CSE across other sample characteristics such as race/ethnicity, sexual orientation, or socioeconomic status. Studies assessing which racial or ethnic groups are at increased risk of CSE have

faced mixed evidence (e.g., Chohaney, 2016; Curtis et al., 2008; Reid & Piquero, 2014; Tyler, 2009) and separate analyses for the impact of childhood abuse across different demographics other than gender remains to be done. Even though studies have begun to examine which groups are at increased risk of CSE, the processes and set of risk factors that put these individuals at increased risk deserve more attention in follow-up research.

In addition, while research would benefit from more definitional clarity and consistency, our meta-analysis demonstrated that the impact of any of the abuse types does not differ significantly between studies defining outcome measures that approximate the CSE definition versus studies utilizing other terminology. Although one could argue that youth with a history of sexual abuse have an increased vulnerability to engagement in any type of CS acts, our finding also comports with the idea that studies utilized different terminology but similar operationalizations of their outcome measures (see also Table 1).

Whereas this study addressed the independent impacts of childhood abuse types, future research should consider the impact of experiencing multiple abuse types. As mentioned earlier, the aggravated mental health effects associated with cumulative and co-occurring victimization types may also explain why someone with a history of multiple childhood abuses may have less resiliency to cope with risk of CSE than someone that experienced one crime-type victimization. This was suggested in a study by Adjei and Saewyc (2017) who reported on increased risks to be sexually exploited among youth with a history of both sexual and physical abuse, whereas no significant risks were reported for youth who experienced either sexual or physical abuse only. In addition, Kennedy, Bybee, Kulkarni, and Archer (2012) identified how victimization experiences may cluster together in groups of experiencing different types of abuse (e.g., sexual or physical abuse) and to different degrees (low to severe), impacting the odds to engage in the sex trade in different ways.

As a key recommendation for future research, more research should be devoted to the examination of indirect effects of sexual, physical, and emotional abuse. Whereas the number of studies examining such pathways was too low to be included in a meta-analysis, prior studies support the notion that the impact of sexual abuse may be both direct and indirect. An early article by West and De Villiers (1992) contend that any causal link between childhood abuse and involvement in CS is indirect and intervened by other risk factors, such as a history of running away. Tyler, Hoyt, and Whitbeck (2000) argue that it is the interaction of individual-level and contextual factors that increase a youth's risk of sexual victimization. Most cited are the associations between childhood abuse and other common risk factors for CSE such as running away and substance abuse, which may explain an increased risk of sexual exploitation among sexually abused youth.

By way of illustration, several studies have observed how experiencing child abuse from a parent or caregiver is one of the main causes for youth to run away from home (Cobbina & Oselin, 2011; Nadon et al., 1998; Reid, 2011; Roe-Sepowitz,

2012; Silbert & Pines, 1981; Tyler et al., 2001). The vulnerability to sex trafficking may be amplified in an "unprotected, unsupervised social context" of running away and homelessness (Whitbeck, Chen, Hoyt, Tyler, & Johnson, 2004; Whitbeck, Hoyt, & Yoder, 1999). In a desperate attempt to flee an abusive situation, youth are left vulnerable to the hazards of the street environment, such as associating with deviant peers, spending more time on the street, and engaging in high-risk behaviors. The combination of early emotional and psychological problems and the high-risk environment of the street results in an increased risk of sexual victimization (Tyler et al., 2000), including potentially sexual exploitation. Seng (1989) concludes that it is not so much sexual abuse that increases risk of CSE, as it is that running away leads to engaging in CS.

Several other studies have found substance use and abuse to be associated with CSE (Martin, Hearst, & Widome, 2010; Reid, 2011; Reid & Piquero, 2014), though there has been disagreement in the literature as to whether substance abuse increases the risk of CS or whether CS leads to substance use. Research supports the relationship between child abuse and substance abuse. For example, Kunitz, Levy, McCloskey, and Gabriel (1998) found that emotional trauma resulting from child abuse can lead to drug and alcohol dependence. Youth may use substances to cope with experiences of abuse (Reid, 2011). Instead of running away, some children use substances to alter their consciousness and produce an illusion of escape (Bender, 2010; Harrison, Fulkerson, & Beebe, 1997). This pathway shows how abuse and trauma can lead to substance use, which in turn can lead to initiating CS to obtain money for drugs and alcohol.

By presenting the current state of research on the impact of childhood abuse on CSE, we hope this meta-analysis will inspire future research and policy on CSE risk factors and screening tools. The need for this research grows as screening tools become more utilized in health-care settings and youth service agencies. In one study, Lederer and Wetzel (2014) found that almost 88% of trafficked women and adolescents had contact with a health-care provider while being trafficked and 63% were treated at a hospital/emergency room. In a study focused on sexually exploited youth in New York City, 75% reported seeing a medical provider within the last 6 months (Curtis et al., 2008). As such, health care and other service providers are in a unique position to screen vulnerable populations, and due to the difficulty in identifying trafficked youth, should have access to the most efficient tools.

### Acknowledgments

The authors are grateful for comments received by the audience at the American Society of Criminology in Philadelphia (2017) as well as research faculty, research fellows and research assistants of the Violence and Justice Research Laboratory at Northeastern University, Boston. The authors further thank the editor and reviewers of *Trauma, Violence, & Abuse* for their comments on earlier versions of this article.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The current study was, in part, funded by the Violence and Justice Research Laboratory of the Institute of Race and Justice, Northeastern University, Boston (2017).

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