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You Learn What You Live: Prevalence of Childhood Adversity in the Lives of Juveniles Arrested for Sexual Offenses

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Abstract: *Social workers often find themselves working with children or adolescents who have been victims of adverse childhood experiences (ACEs), including youths who have ended up in the juvenile justice system. Childhood trauma has been linked to negative health, mental health, and behavioral outcomes across the lifespan. The aim of this study was to examine the prevalence rates of child maltreatment and household dysfunction in the lives of juveniles who have been arrested for sexual offenses (JSO; n = 6,549). ACE prevalence rates for JSOs were compared by gender to juveniles arrested for other crimes, to adults arrested for sexual offenses, and to the general population. Youths in the delinquency system in Florida had much higher rates of high-ACE scores than the general population, indicating that they came from households where the accumulation and variety of early adversity is a salient feature in their lives. For those who have engaged in sexually abusive behavior, the existence of early maltreatment and family problems was prominent. Through a better understanding of the traumatic experiences of these youths, we can inform and enhance interventions designed to improve the functioning of sexually abusive juvenile clients and their families, and reduce risk of future recidivism.*

Keywords: *Juvenile; sexual offense; ACE; adverse childhood experience; early adversity; trauma-informed care*

Social workers often find themselves working with children or adolescents who have been victims of maltreatment, including youths who have ended up in the juvenile justice system. Early adversity has been clearly linked to negative health, mental health, and behavioral outcomes across the lifespan (Centers for Disease Control and Prevention, 2013; Felitti et al., 1998). Social workers and social service organizations have begun to embrace trauma-informed practices as a crucial part of the psychosocial assessments and interventions provided to clients in general, and to adult sexual offenders more specifically (Levenson, 2017; Levenson & Willis, 2014; SAMHSA, 2014a; Strand, Sarmiento, & Pasquale, 2005). The aim of this study was to examine the prevalence rates of child maltreatment and family problems in the lives of juveniles who have been arrested for

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sexual crimes. Through a better understanding of the experiences of these youths, we can inform and enhance clinical and case management practices to improve the functioning of sexually abusive juvenile clients and their families, and reduce risk of future recidivism.

Adverse Childhood Experiences

In the early 1990s the Centers for Disease Control (CDC) partnered with Kaiser Permanente, a health maintenance organization, to study the prevalence of adverse childhood experiences (ACEs) in the lives of American adults (Felitti et al., 1998). Inspired initially by the observation of a curious phenomenon – that obese patients often had a history of childhood abuse – physicians hypothesized that adult health was sometimes compromised by traumatic experiences earlier in life. They postulated that painful childhood experiences, especially those that are chronic, can lead to high-risk coping behaviors (e.g., substance abuse, over-eating) which impact health and well-being across the lifespan (Felitti, 2002). Using a dichotomous 10-item scale, the ACE researchers investigated the rates of five child maltreatments (sexual, physical, and verbal abuse, and physical and emotional neglect) as well as five common areas of household dysfunction (domestic violence, unmarried parents, and the presence of a substance-abusing, mentally ill, or incarcerated household member) in a sample of over 17,000 adults. One's total ACE score is the sum of the items endorsed (range = 0-10), with higher scores indicating a greater degree of childhood adversity. Perhaps most revealing about the study was the staggering frequency of ACEs; nearly two-thirds of these middle-class adults endorsed at least one item, and 12.5% endorsed four or more (CDC, 2013).

Subsequently, many studies have shown significant correlations and a dose-response relationship between early adversity and a range of medical and behavioral disorders including chemical dependency, physical disease, and psychopathology (e.g., Anda et al., 2006; Douglas et al., 2010; Edwards, Holden, Felitti, & Anda, 2003; Weiss & Wagner, 1998). Adverse childhood experiences create toxic stress, leading to an over-production of hormones associated with survival responses (fight or flight), and producing neurobiological changes in the brain that can impede cognitive processing and self-regulation capacities (Alink, Cicchetti, Kim, & Rogosch, 2012; Creeden, 2009; Finkelhor & Kendall-Tackett, 1997; SAMHSA, 2014a; Streeck-Fischer & van der Kolk, 2000; van der Kolk, 2006). Research has indicated that the multiplicity, frequency, and chronicity of early adversity creates what has become known as complex post-traumatic stress, manifesting in a constellation of maladaptive coping strategies, mental health symptoms, and behavioral problems (Cloitre et al., 2009; Herman, 1992; van der Kolk, 2014).

The frequency and correlates of ACEs in criminal populations

ACEs were surprisingly common in the original CDC sample, but are even more pervasive in poor, minority, marginalized, and oppressed populations commonly served by social workers (Eckenrode, Smith, McCarthy, & Dineen, 2014; Larkin, Felitti, & Anda, 2014). Pathogenic parenting and deprivational environments hinder family functioning and reinforce maladaptive coping styles, and household dysfunction is often exacerbated by the stress of impoverished socioeconomic conditions (Patterson, DeBaryshe, & Ramsey, 1990). Criminal samples have higher rates of childhood maltreatment and household

dysfunction than the general population, and exposure to early trauma was significantly associated with mental health disorders, drug abuse, and violence in adult offenders (Harlow, 1999; Messina, Grella, Burdon, & Prendergast, 2007). Prospective analyses from the Chicago Longitudinal Study identified child maltreatment as a predictor of adult criminal behavior in a sample of over 1,500 low-income minority youths (Mersky, Topitzes, & Reynolds, 2012). Prisoners often witnessed violence in their childhood homes and communities, and reported many other types of traumatic experiences such as the death of a family member, parental abandonment, or out-of-home foster care placement (Harlow, 1999; Maschi, Gibson, Zgoba, & Morgen, 2011).

Both male and female adult sexual offenders report childhood trauma at rates greater than the general population (Levenson, Willis, & Prescott, 2015, 2016), with male sexual offenders ($N = 679$) three times more likely to report child sexual abuse (CSA), twice as likely to report physical abuse, thirteen times more likely to have been verbally abused, and four times more likely to experience emotional neglect or having unmarried parents. Among adult sexual offenders, ACE scores were associated with persistence and versatility in arrest patterns, increased sexual violence and sexual deviance, and substance abuse disorders (Levenson, 2015; Levenson & Grady, 2016; Levenson & Socia, 2015). Physical and sexual abuse prospectively predicted increased risk of being arrested for a sexual crime (Widom & Massey, 2015).

Juveniles involved in the justice system are especially likely to have lived in chaotic homes where caretakers were poorly equipped to parent effectively or to protect their children from harm. Research on justice-involved youths has consistently found higher rates of adversity compared to youths in the general population, and they are more likely to have suffered multiple and chronic forms of trauma (Abram et al., 2004; Baglivio et al., 2014; Dierkhising et al., 2013). Furthermore, these youths have a greater likelihood of child protection involvement and foster care placements, exacerbating traumagenic factors that contribute to the development of delinquent behavior (Barrett, Katsiyannis, Zhang, & Zhang, 2013). ACE factors are inter-related, and high-risk youths are especially vulnerable to increased odds of multiple adversities (Baglivio & Epps, 2016). The emotional and behavioral self-regulation deficits commonly seen in maltreated youths can pave the way for disciplinary problems in school which can shift a child's trajectory toward the "pipeline to prison" (Wald & Losen, 2003).

The link between early adversity and development of sexual behavior problems

Notably, childhood trauma is associated with risky sexual behavior, such as early onset of sexual activity, higher rates of sexually transmitted diseases, unwanted pregnancies, and higher numbers of sexual partners (Dietz et al., 1999; Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000). Youths who were lured into sex trafficking and later arrested were found to have extraordinarily high rates of every single ACE (the highest being parental neglect and sexual abuse), and higher cumulative ACE scores than non-trafficked youths (Naramore, Bright, Epps, & Hardt, 2015). Thus, maltreated children are especially vulnerable to re-victimization by sexual predators and human traffickers, but they may also be at increased risk for engaging in behaviors that violate the sexual boundaries of others.

The pathways to juvenile sexual offending are certainly varied and complex (Burton, Duty, & Leibowitz, 2011). The etiology of sexually abusive behaviors seems to be fostered by early attachment disruptions, whereby attempts are made to satisfy unmet emotional and intimacy needs through sexual or aggressive means (Bushman, Baumeister, & Phillips, 2001; Grady, Levenson, & Bolder, 2016; Marshall, 2010; Smallbone & Dadds, 1998). Attachment theory proposes that if a child's caretakers are not trustworthy, nurturing, consistent, and responsive to needs, youngsters will have difficulties establishing secure bonds with others across the lifespan (Bowlby, 1977, 1988). Chaotic home environments can preclude the development of healthy interpersonal skills, and inconsistent or abusive parenting styles may not model empathy (Carlson & Sroufe, 1995; Cicchetti & Banny, 2014; Rutter, Kim-Cohen, & Maughan, 2006). Abused and neglected children are therefore exposed to relationships characterized by betrayal and invalidation, which contributes to distorted cognitive schema, boundary violations, disorganized attachment patterns, personality pathology, and emotional dysregulation (Chakhssi, Ruiter, & Bernstein, 2013; Loper, Mahmoodzadegan, & Warren, 2008; Young, Klosko, & Weishaar, 2003). Sexual offending may be one manifestation of these maladaptive responses.

Purpose of the Current Study

The current exploratory and comparative study examines the prevalence of ACE items and the distribution of ACE scores of juvenile offenders at the time of their first arrest. Juveniles who were charged with a sexual offense prior to turning 18 years of age are compared to those with only non-sexual arrests on each ACE type and overall ACE score. Additionally, the juvenile sample ACE measures are compared to prevalence rates in a sample of adult male and female sexual offenders reported in prior published research. Finally, the rates of early adversity in this specialized population of juveniles arrested for sexual offenses (JSO) are compared to general population statistics reported by the Centers for Disease Control and Prevention (CDC) based on data from over 17,000 adults in the original ACE study. Because differences have been found in prevalence rates of different adversities for males and females (Felitti, 1998), all comparisons are gender-specific, meaning females and males are compared across samples separately. We hypothesized that JSOs will have higher ACE scores and higher prevalence rates on every ACE item than the original CDC study participants.

Method

Sample

The current study employs official Florida Department of Juvenile Justice (FDJJ) charge data on all youths who aged out of the juvenile justice system (turned 18 years of age) between January 1, 2007 and December 31, 2015. Of note, a youth may be continued on juvenile justice probation supervision past his/her 18th birthday. However, any new law offense committed after the age of 18 will be processed at the local adult jail and the charges will be handled in the criminal justice system. The purpose of the current study is to examine juveniles who were arrested for sexually-based offending prior to 18 years of age. Additionally, arrest in the current study is not meant to imply all youths are "booked" and processed at a juvenile assessment center (i.e., there may not be a custody event). Many

instances, especially for sexual offending, there may be a gap between the event (the offense) and discovery. In these instances, charges may be incurred without a custody event.

Upon arrest, all juvenile offenders are assessed using the FDJJ risk/needs assessment, the Community Positive Achievement Change Tool (C-PACT). The C-PACT has been found predictive of recidivism for multiple samples of Florida juvenile offenders for both males and females, and across age and dispositions (such as diversion, probation, and day treatment; Baglivio, 2009; Baglivio & Jackowski, 2013; Baird, Healy, Johnson, Bogie, Dankert, & Scharenbroch, 2013; Winokur-Early, Hand, & Blankenship, 2012). Additionally, the reliability of the C-PACT was assessed using videotaped interviews and an offense history file, finding an intra-class coefficient (ICC) of .83, with 4% of items (5 items) with less than 75% agreement with an expert rater (Baird et al., 2013).

The C-PACT has two versions, a pre-screen and a full assessment, which both produce identical overall risk to re-offend classifications (low, moderate, moderate-high, and high risk). The versions differ in that the full assessment contains 80 additional items (not used in the overall risk to re-offend classification) that provide more detailed information about each youth. FDJJ policy dictates that all rated as moderate-high or high-risk receive the full assessment, as must all youths being considered for residential placement, day reporting/day treatment, or the FDJJ intensive family therapy services termed Redirections (predominately Multisystemic Therapy and Functional Family Therapy). These policies result in thousands of low- and moderate-risk youth also being assessed using the full assessment version annually. Additionally, the vast majority of youth with sexual offending charges are assessed with the full assessment, regardless of overall risk to re-offend.

The current study includes juveniles assessed with the C-PACT full assessment during the study period ($n=89,045$; 19,910 females, 69,135 males). Youths who were only assessed with the C-PACT pre-screen were excluded, which intentionally oversamples higher risk youths. The C-PACT pre-screen does not contain items to compute complete ACE scores and therefore youths who were only assessed with the pre-screen were excluded from the current study. This process oversamples higher risk youths. Specifically, an additional 423,413 youths that also aged out of the juvenile justice system during the study period were assessed with the C-PACT pre-screen. The 89,045 youths included in the current study represent 17.4% of all youths that aged out, and were significantly (at $p<.05$) more male, Black, younger at first arrest, had more history of detention placements, and were assessed as higher risk to re-offend. This demonstrates the current study may not be as generalizable to all juvenile offenders, but is generalizable to the most policy-relevant group, i.e., higher risk juvenile offenders. Of note, only 0.3% of the excluded youths (pre-screen only) has a history of sexual misdemeanor offense, and 1.6% had a history of a felony sexual offense.

Thus, the current sample of 89,045 youths included 46.3% low-risk, 18.7% moderate-risk, 21.9% mod-high-risk, and 13% high-risk youths, as classified by the full assessment. Just under 7.4% of the juveniles evidenced an official charge for sexual offending prior to the age of 18. Specifically, 312 females and 6,237 males were arrested for a sexual offense,

making the prevalence of female juvenile sexual offending 1.6% and male juvenile sexual offending 9% of all delinquent youths in the current sample. Table 1 provides the race/ethnicity and age of the juvenile subgroup samples.

Table 1. *Male and Female Juvenile Offenders with and without Sexual Offenses- Descriptive Statistics*

	Female JSO*	Female non-JSO	Male JSO	Male non-JSO
Ethnicity				
White	41.7%	48.7%	36.5%	40.1%
Black	45.0%	42.9%	46.0%	46.1%
Hispanic	12.8%	8.0%	17.0%	16.6%
“Other”	0.5%	0.3%	0.5%	0.5%
Age**	15.5	16.2	15.9	16.3

Notes: *JSO= juvenile sexual offense
 **Average age at assessment upon first arrest.

Measures

Juvenile with sexual offense history (JSO). Study participants who had an official sexual offense charge prior to the age of 18 were classified as juveniles with a sexual offense history (=1, else= 0). Sexual offenses could be either misdemeanor or felony offenses. Juveniles classified as JSO must have been arrested one or more times for a sexual offense prior to age 18, and could have been arrested for non-sexual offenses as well (meaning we are simply comparing juvenile offenders with at least 1 sexual offense to those without any sexual offenses, not necessarily general juvenile offenders to sexual offense-only juvenile offenders). Of the 6,549 juveniles with sexual offense histories, the most sexual offense charges included felony sexual battery (58%), felony kidnapping with sexual offending (0.6%), other felony sexual offenses (34.7%), and misdemeanor sexual offenses (6.7%). Thus, most juveniles with a sexual offense history (93.3%) were arrested for felony sexual offenses. The most frequent specific charge was felony sexual assault by sexual battery to a victim under 12 years of age (n=2,012, 30.7%). To clarify, “sexual battery” in Florida refers to oral, anal, or vaginal penetration by, or union with, the sexual organ of another or the anal or vaginal penetration of another by any other object.

ACE Exposures & ACE Score. While created to assess juveniles’ overall risk to commit delinquent/criminal offenses, the C-PACT assessment contains items which encompass the ten specific ACE items identified by the CDC (see Felitti et al., 1998). The ACE scale includes five child maltreatments and five types of household dysfunction. The exact items, responses, and coding used to create ACE indicators and the ACE score from C-PACT data have been reported elsewhere (Baglivio et al., 2014), and have been replicated in several prior studies (e.g., Baglivio & Epps, 2016; Baglivio et al., 2016; Wolff & Baglivio, 2016; Wolff, Baglivio, & Piquero, 2015). The following ten ACE indicators were included and coded dichotomously (yes = 1, no = 0):

- Emotional abuse: Parents/caretakers were hostile, berating, and/or belittling to youth;

- Physical abuse: The youth reported being a victim of physical abuse by a family member;
- Sexual abuse: The youth reported being the victim of sexual abuse/rape;
- Emotional neglect: The youth reported no support network, little or no willingness to support the youth by the family, youth does not feel close to any family member;
- Physical neglect: The youth has a history of being a victim of neglect (includes a negligent or dangerous act or omission that constitutes a clear and present danger to the child's health, welfare, or safety, such as: failure to provide food, shelter, clothing, nurturing, or health care);
- Family violence: The level of conflict between parents included verbal intimidation, yelling, heated arguments, threats of physical abuse, domestic violence, or the youth has witnessed violence at home or in a foster/group home;
- Household substance abuse: History of parents and/or siblings in the household abusing alcohol or drugs;
- Household mental illness: History of parents and/or siblings in the household includes mental health problems;
- Parental separation/divorce: Youth does not live with both mother and father;
- Incarceration of household member: There is a jail/prison history of family members.

ACE exposures were summed for a cumulative ACE score, ranging from 0 (no exposures) to 10 (exposed to all indicators). Again, ACEs were assessed at the time of first arrest of the juvenile. Each ACE indicator is self-reported by the youth (consistent with the original ACE Study; Felitti et al., 1998), as well as corroborated with child welfare records (to which the assessors have access). The youth's self-reported affirmative response, as well as instances in which child welfare records indicate abuse/exposure are counted as an endorsement of each ACE item. Instances in which child welfare investigations led to decisive findings that the maltreatment did not occur are counted as a "no" for a given ACE indicator, and inconclusive child welfare investigations are captured according to the youth's self-reported response.

Analytic Strategy

First, we conducted descriptive statistics for the ACE items and ACE score distributions of the JSO group. Group comparisons were then used to explore the prevalence rates of each ACE item as well as the distributions of ACE scores for JSOs by gender, compared to non-JSOs, adult sex offenders, and the general population. Chi-square statistics were used to assess prevalence differences. Due to the large sample sizes of juvenile offenders without sexual offense histories, we additionally supply measures of effect size to assess substantive significance (Phi and Cohen's *d*). The adult sex offender data used in the comparison has been reported elsewhere (Levenson et al., 2015, 2016) and was collected in a nonrandom sample of male and female participants surveyed in outpatient, prison, and civil commitment sex offender treatment programs across the United States ($n=679$ males, 47 females). Finally, we provide a visual representation

comparing the overall ACE scores of JSOs, juveniles without a sexual offense history, adult sex offenders, and the general population (with gender-specific figures).

Results

Table 2 provides the results of analyses comparing female JSOs with female juvenile offenders without a sex crime history. The original CDC study of female prevalence rates are also provided to provide reference for how juvenile offenders differ from a population-based sample of adults. As shown, female JSOs have higher prevalence rates than non-JSO females in every ACE category except emotional abuse and household incarceration histories. Significant differences were found in the rates of physical abuse, sexual abuse, and physical neglect, as well as higher overall ACE scores. The magnitudes of the effects are statistically significant, but would be considered small (Cohen, 1988). Importantly, results suggest that while two exposures are slightly higher for non-JSO females, there is no exposure for which female non-JSOs have statistically significantly higher rates than female JSOs. Additionally, female JSOs evidenced higher prevalence on eight of the ten ACE indicators than the female CDC sample.

Table 2. *Female Juveniles with and without Juvenile Sexual Offenses- ACE Prevalence and Comparisons*

Measure	JSO (n=312)	Non-JSO (n=19,598)	χ^2	Phi	CDC Study (n=9,367 ♀)
Emotional Abuse	30%	34%	1.97	-	13%
Physical Abuse	39%	28%	15.72***	.028	27%
Sexual Abuse	42%	23%	64.78***	.057	25%
Emotional Neglect	31%	27%	1.98	-	17%
Physical Neglect	23%	11%	49.29***	.050	9%
Family Violence	58%	55%	1.05	-	14%
Household Substance Abuse	22%	18%	3.25	-	30%
Household Mental Illness	10%	7%	3.30	-	23%
Separation/Divorce	89%	87%	0.69	-	25%
Household Incarceration	52%	53%	.052	-	5%
			t-statistic	Cohen's d	
Average ACE Score	4.0	3.4	-4.06***	.23	

Note: JSO= juvenile sexual offense history; *p<.05, **p<.01, ***p<.001.

Table 3 compares male JSOs to non-JSO males, and provides the original CDC study male prevalence rates for reference. JSO males have significantly higher prevalence rates of physical abuse, sexual abuse, physical neglect, household mental illness, and separation/divorce than male juvenile offenders without a sexual offending history. Additionally, the overall ACE score is significantly higher for JSO males, though not substantively meaningful, as both JSO and non-JSO males averaged just shy of 3 ACE exposures. Non-JSO males evidenced higher emotional neglect and household incarceration than male JSOs. It should be noted that only the sexual abuse difference (13% for male JSO, 5% for non-JSO males) is substantively meaningful, per effect sizes, but both groups show lower rates of CSA than the CDC male population (16%). Additionally, the overall ACE score of 2.7 for male JSO is more than 1 ACE exposure lower than the 4.0 average for female JSOs presented in Table 2 ($t=11.066$, $p<.001$). Male JSOs evidence

higher rates than the male CDC sample on five of the ten ACE indicators, with a greater than ten times prevalence in household incarceration (46% compared to 4%; of note, non-JSO males evidence even greater emotional neglect and household incarceration than the CDC males).

Table 3. *Male Juveniles with and without Juvenile Sexual Offenses- ACE Prevalence and Comparisons*

Measure	JSO (n=6,237)	Non-JSO (n=62,898)	χ^2	Phi	CDC Study (n=7,970 ♂)
Emotional Abuse	21%	26%	81.78***	-.034	8%
Physical Abuse	20%	15%	133.93***	.044	30%
Sexual Abuse	13%	5%	725.25***	.102	16%
Emotional Neglect	20%	22%	14.33***	-.014	12%
Physical Neglect	11%	6%	201.93***	.054	11%
Family Violence	38%	38%	.242	-	12%
Household Substance Abuse	13%	14%	2.58	-	24%
Household Mental Illness	5%	4%	10.28**	.012	15%
Separation/Divorce	85%	83%	29.45***	.021	22%
Household Incarceration	46%	48%	4.42*	-.008	4%
Average ACE Score	2.7	2.6	<i>t</i> -statistic -4.81***	Cohen's <i>d</i> .06	

Note: JSO= juvenile sexual offense history; *p<.05, **p<.01, ***p<.001.

Table 4 compares the 312 female JSO youths (those reported in Table 2) with 47 adult female sex offenders examined in prior work (Levenson et al., 2015). The female JSOs have significantly higher rates of physical neglect, family violence, separation/divorce, and household incarceration than those reported by adult female sex offenders, while the adult females reported higher rates of household substance abuse. The average ACE score was also higher for female JSO than adult female sex offenders, by almost one ACE exposure (JSO= 4.0, adult female SO= 3.2). Of note, the effect sizes are more substantial for this comparison than the prior comparisons within juvenile groups (Tables 2 and 3).

Table 4. *ACE prevalence of Females JSOs compared to Adult Female Sex Offenders*

Measure	Female JSO (n=312)	Female SO (n=47) ^a	χ^2	Phi
Emotional Abuse	30%	38%	1.17	-
Physical Abuse	38%	34%	0.34	-
Sexual Abuse	42%	50%	0.97	-
Emotional Neglect	31%	40%	1.75	-
Physical Neglect	23%	11%	3.91*	-.104
Family Violence	58%	23%	19.67***	-.234
Household Substance Abuse	22%	40%	7.40**	.144
Household Mental Illness	10%	21%	5.19*	.120
Separation/Divorce	89%	47%	51.70***	-.379
Household Incarceration	52%	17%	20.32***	-.238
Average ACE Score	4.0	3.2	<i>t</i> -statistic 2.11*	Cohen's <i>d</i> .33

Notes: JSO= juvenile sexual offense; SO= sex offender; a= sample size for each ACE indicator for adult females ranged from 46 to 47 due to missing data; *p<.05, **p<.01, ***p<.001.

Table 5 compares the 6,237 male JSOs to 679 adult male sex offenders (SO) examined in prior work (Levenson et al., 2016). The prevalence rates of every ACE indicator differed significantly between the groups; all but one had meaningful effect sizes. Specifically, male JSOs evidenced more family violence, absent parents, and household incarceration than adult male SOs. Adult male SOs, in contrast, reported higher rates of emotional abuse, physical abuse, sexual abuse, physical neglect, household substance abuse, household mental illness, and a higher overall ACE score. The largest substantive difference is in reports of household mental illness (26% for adult male SO, only 5% for male JSO). Additionally, the reported rate of sexual abuse is nearly three times higher for adult male SOs compared to male JSOs (38% compared to 13% for male JSO).

Table 5. ACE Prevalence of Male JSOs compared to Adult Male Sex Offenders

Measure	Male JSO (n=6,237)	Male SO (n=679) ^a	χ^2	Phi
Emotional Abuse	21%	53%	345.01***	.223
Physical Abuse	20%	42%	169.19***	.156
Sexual Abuse	13%	38%	288.49***	.204
Emotional Neglect	20%	38%	113.28***	.128
Physical Neglect	11%	16%	15.42***	.047
Family Violence	38%	24%	51.63***	-.086
Household Substance Abuse	13%	47%	513.17***	.272
Household Mental Illness	5%	26%	381.01***	.235
Separation/Divorce	85%	54%	398.31***	.64
Household Incarceration	46%	23%	136.30***	-.140
			<i>t</i> -statistic	Cohen's <i>d</i>
Average ACE Score	2.7	3.5	-7.27***	.30

Notes: JSO= juvenile sexual offense history; SO= sex offender; a= sample sizes for each ACE indicator for adult male sex offenders ranged from 635 to 676 due to missing data; * $p < .05$, ** $p < .01$, *** $p < .001$.

Finally, Figures 1 and 2 compare JSO, adult SO, and the original ACE study sample of adults on each ACE indicator for females and males, respectively. Of particular importance are the comparisons at the tails of each distribution, namely the proportion with zero ACE exposures, and the proportion with four or more exposures. As shown in Figure 1, only 3.2% of the female JSOs reported zero exposures, compared to 19.2% of adult female SOs, and 34.5% of the females in the original CDC Study. In contrast, while 15.2% of the CDC females self-endorsed four or more ACE items (proven to have staggering health and psychosocial consequences later in life), 41.4% of adult female SOs and 55.1% of female JSOs reported four or more ACE exposures.

Figure 1. *Distribution of ACE Scores by Female Sample*

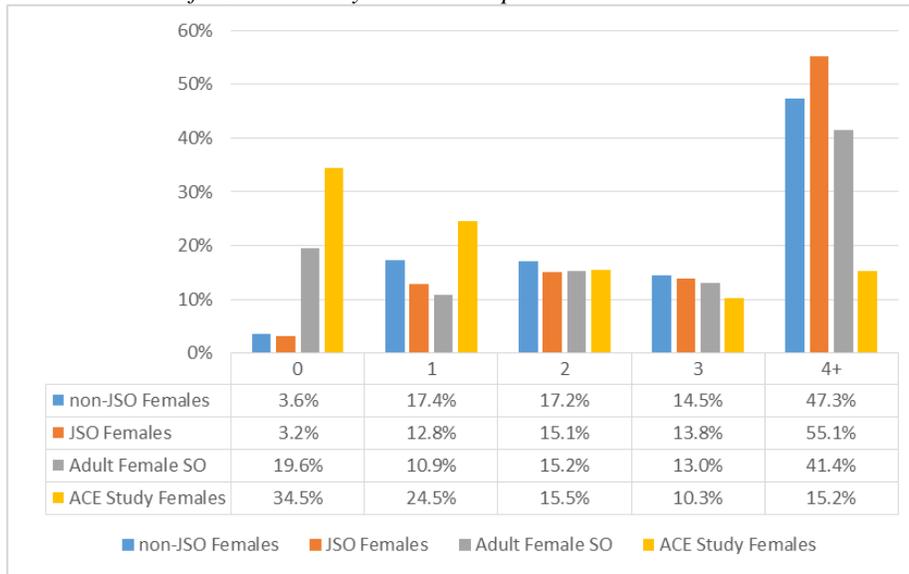
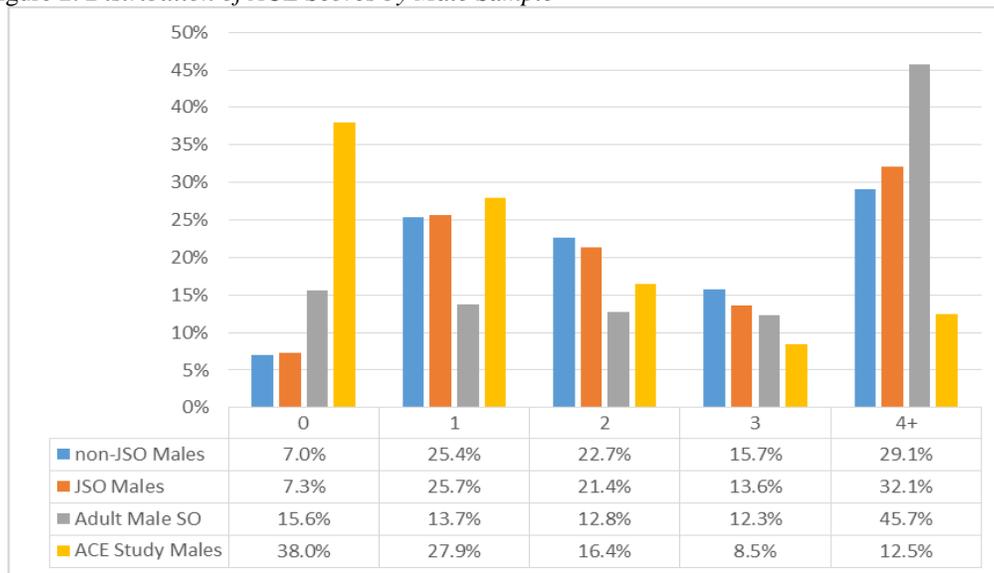


Figure 2 illustrates similar findings. Thirty-eight percent of the ACE study males evidenced zero exposures, compared to only 15.6% of male SOs and 7.3% of male JSOs. Additionally, while 12.5% of ACE study males reported four or more exposures, 45.7% of male SOs, and 32.1% of male JSOs endorsed four or more ACE items. In contrast to the females discussed above (Figure 1), for males, the adult SOs evidenced higher overall ACE prevalence than male JSOs.

Figure 2. *Distribution of ACE Scores by Male Sample*



Discussion

This study represents a large-scale investigation of the prevalence of early adversities in the lives of youths who encounter the criminal justice system, and in particular, those who are arrested for sexual crimes as minors. The findings lend support for our hypothesis: youths in the delinquency system in Florida have much higher rates of high-ACE scores than the general population, indicating that they come from households where the accumulation and variety of early adversity is a salient feature in their lives. For those who have engaged in criminal sexual behavior, the existence of early maltreatment and dysfunctional family dynamics is prominent.

The differences in some of the prevalence rates between JSO and adult SOs are noteworthy. We speculate that some of the differences are due to the data collection methodologies. The JSO data included official record reviews, while the adult SO data were all self-reported retrospectively. Most of the differences are seen on the household dysfunction items (e.g., domestic violence, substance abuse, mental illness, household member incarcerated, parental absence), which may be more likely to be documented in official records. On the other hand, it may be that official records of youths are less likely to detect certain events if the child is not disclosing it (such as sexual abuse). Many children do not report abuse by close relatives or acquaintances, due to shame, fear, or loyalty to the perpetrator. It is also possible that some individuals do not recognize their own victimization, and this may be especially true for youths for whom abusive households or violent communities have seemed normalized. Conversely, some offenders may embellish their maltreatment history as a way to gain sympathy or to obfuscate their criminal culpability. There may also be some generational differences. Perhaps the adult SOs grew up in an era where parents were less likely to be unmarried, and when policing was less aggressive, resulting in lower endorsements of unmarried parents and justice-involved household members. On the other hand, the adults tended to have higher rates of reported mental illness and substance abuse in their families, suggesting perhaps a greater awareness of these conditions in retrospect than during childhood, as well as a societal consciousness and responsiveness to these issues in recent years.

Interestingly, the female JSOs had substantially higher rates of childhood sexual abuse (CSA) than the general female population (42% compared to 25% in the CDC sample), but the male JSOs reported lower rates than the general population (13% vs. 16% of males in the CDC sample). While adult male SOs have reported much higher CSA rates (38%) than males in the general population, perhaps male adolescents are less apt to report CSA due to the stigma that remains for male victims. It is also possible that the male youths do not fully understand the parameters of sexual abuse and/or that they minimize the effects of their own victimization in attempts to alleviate guilt and shame for their own sexually aggressive behaviors. Both male and female JSO youths in the current sample had markedly greater rates of family violence, absent parents, and household members involved with the criminal justice system than the CDC sample, suggesting that an understanding of the role played by these interpersonal dynamics in the homes of justice-involved youths can provide insight into the psychosocial etiology of delinquent behavior.

Implications for Trauma-informed Social Work Practice and Policy

Predictors of sexual deviance in adult male sex offenders have been found to include CSA, emotional neglect, mental illness in the home, and unmarried parents, while physical abuse, substance-abusing parents, and having incarcerated family members have been found to predict sexual violence (Levenson & Grady, 2016). Though there is no definitive victim-to-victim trajectory for maltreated children who go on to perpetrate sexual assault, sexually abusive behaviors sometimes compensate for feelings of disempowerment or invalidation. They may be learned from modeling an abuser's behavior and distorted thinking, or they become associated with sexual arousal due to early abusive conditioning experiences (Seto, 2008). Sexualized coping can become a way of soothing distress, and can also become a maladaptive strategy used to satisfy emotional needs such as intimacy, affection, attention, and control (Bushman et al., 2001; Levenson et al., 2016). The abused or neglected youth may seek out victims whom he perceives as weaker and who will not hurt him; younger children seem "safe" and therefore the JSO feels less vulnerable.

Witnessing domestic violence models aggression and poor self-regulation, and distorts perceptions of intimate relationships. Growing up with family members who are justice-involved may reinforce criminal modeling, and may also exacerbate feelings of hopelessness and helplessness for children observing such conditions in their own homes or experiencing the absence of a parent due to incarceration. Disempowerment can create a distorted sense of entitlement, and violence can become instrumental in grasping a sense of power and control. Finally, the chaotic household dynamics characterized by family violence may offer few opportunities to observe and experience healthy emotional attachments, paving the way for affective and behavioral dysregulation (Ford, Chapman, Connor, & Cruise, 2012).

Thus, youths with sexual behavior problems would likely benefit from trauma-informed practices aimed at corrective experiences that help troubled youngsters identify unmet emotional needs and to meet those needs in healthy and non-victimizing ways. Clinical staff and others working throughout the juvenile justice system are encouraged to avoid disempowering dynamics such as unnecessarily authoritarian interactions, and to model appropriate boundaries and respectful communication. The use of restraints and seclusion can be re-traumatizing for physically or sexually abused children. Although they are occasionally necessary to ensure safety to self and others, they should be used cautiously and as a last resort. Engaging youths in activities that foster self-efficacy is profoundly important, as they can promote cognitive transformation by which maltreated youths begin to view themselves as competent and worthy of love and respect. Treatment for juveniles who have committed sexual offenses has historically relied heavily on psycho-educational models focused on distorted thinking about sexual abuse and relapse prevention, but should emphasize process-oriented relational interventions that can help youths improve interpersonal skills and alter general maladaptive cognitive schema (Burton et al., 2011; Cicchetti & Banny, 2014).

By understanding how childhood trauma contributes to deficits in self-regulation and relational skills, we can inform and refine correctional interventions that reduce future risk of recidivism (Abbiati et al., 2014; Levenson, 2014). The assessment and understanding of

the impact of early trauma is crucial in social work educational curricula and in practice across all problems and populations. Trauma-informed treatments are those which incorporate common elements of client-centered engagement, therapeutic alliance, and emotional safety that transcend specific models of intervention (Strand, Hansen, & Courtney, 2013; Strand et al., 2005). Childhood victimization can result in anxious and insecure attachment styles, and thus it is crucial for social workers to attend to the environmental context of delinquent youths and expose them to healthy emotional experiences that model empathy and effective interpersonal styles (Grady et al., 2016; Grady, Swett, & Shields, 2014; Marshall, 2010; Strand et al., 2013). The Substance Abuse and Mental Health Services Administration (SAMHSA, 2014b) emphasizes the need to engage behavioral health consumers in treatment settings that provide psychological safety and collaborative treatment planning, and to avoid harsh responses that can re-enact disempowering family dynamics and re-traumatize clients.

Finally, due to its long-reaching effects, childhood adversity is now commonly viewed as a public health crisis (Anda, Butchart, Felitti, & Brown, 2010; Felitti, 2002; Larkin et al., 2014). It is essential that public policies be reflective of our knowledge about the lasting impacts of toxic stress in childhood and their role in the development of criminal behaviors. Childhood trauma, which is more prevalent in disadvantaged communities and oppressed populations (Eckenrode et al., 2014), increases risk for poly-victimization and subsequent psychopathology (Cloitre et al., 2009; Finkelhor, Turner, Hamby, & Ormrod, 2011). Unfortunately, American social policies designed to address child maltreatment have focused more heavily on offender punishment and child placement rather than primary prevention strategies (Larkin et al., 2014). In order to interrupt the intergenerational transmission of crime and victimization in our communities, it is critical that the child protection and juvenile justice systems invest in comprehensive prevention programs for high-risk families and intervene early with trauma-informed services for child victims (Anda, et al., 2010; Baglivio, et al., 2014; Miller & Najavits, 2012).

As a final note, there were some important racial and ethnic disparities present in the data analyzed. JSOs were more likely to be black than white, which differs from adult SO samples (where about 67% are white and about 22% black; Levenson, Willis, & Prescott, 2016). Both suggest a significant over-representation of blacks compared to the U.S. Census (13%) (U.S. Census Bureau, 2010). In this study, black girls and boys were extremely over-represented in the JSO population. Blacks and minorities are commonly seen in disproportionate numbers in criminal justice samples, suggesting that the legacy of historical trauma and the persistence of racial inequities are important factors to consider when serving delinquent youths with sexual behavior problems.

Limitations

Like any research, the current study is not free from limitations. The ACE scale as a measure of early adversity is imperfect. Clearly, there is an immeasurable array of traumatic experiences beyond child maltreatment and family dysfunction; the ACE scale does not include extrafamilial or environmental factors such as community violence, poverty, discrimination, death, illness, natural disasters, or bullying. The ACE scale is not intended to be an exhaustive measure of trauma, nor does it fully capture the scope of

variables that contribute to sexually abusive behavior. Furthermore, the dichotomous nature of the ACE items does not allow for estimations of the frequency, duration, or severity of childhood traumas. Given the retrospective and cross-sectional research design, statements of causality cannot definitively be made about the link between early maltreatment and juvenile delinquency, but the large sample size provides a generalizable estimate of the prevalence of early adversity in the lives of JSOs. The current study relies on official records of sexual crimes by juveniles and, as such, may underrepresent the prevalence of offenses that do not come to the attention of authorities. Furthermore, as the current study included only juveniles assessed with the PACT full assessment (necessary to calculate ACE scores), results may not be generalizable to lower-risk juvenile offenders. However, we note that higher-risk youths are the most policy-relevant group due to the fiscal and human costs of their offending on society, as well as prior work indicating higher-risk youths have greater childhood traumatic exposure (Baglivio et al., 2014). The current analyses performed approximately 44 separate comparison of means tests for ACEs across samples. A very conservative Bonferroni correction would suggest a p-value of .0011 (.05/44). We note, that all but five of the comparisons reached that very conservative level of significance. As such, we note the limitation of our experimental design in choosing to analyze ACE by gender, as opposed to an aggregate analysis using composite scores with gender as a covariate. However, in defense of our approach, differences among specific ACEs are arguably more relevant to the practitioners and the field than simple comparisons of aggregate ACE scores.

Conclusions

The research is clear and compelling that childhood adversity, especially when it is chronic, contributes to a complex web of neuro-biological, social, psychological, cognitive, and relational impacts across the lifespan, and increases risk for criminal behavior (Larkin et al., 2014; Young, 2014). Trauma-informed workers in the juvenile justice system should recognize the prevalence and impact of childhood adversity, expect the majority of clients to have experienced early trauma, and be well-versed in knowledge related to complex trauma responses and how they contribute to delinquent behaviors. Social work practice with delinquent youths can be informed and enhanced by the literature on attachment, developmental psychopathology, and trauma-informed care. Evidence-based programs include Multi-Systemic Therapy (MST) (Borduin, Schaeffer, & Heiblum, 2009) and Trauma-Focused CBT (Cohen, Mannarino, Kliethermes, & Murray, 2012). The cycle of victimization can be interrupted by a commitment to social policies that provide a preventive safety net for marginalized children and families, and offer comprehensive, evidence-based, and trauma-informed early intervention services for children and their parents when identified as at-risk by the child protection system.

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