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ORIGINAL ARTICLE

Mental Health Diagnoses of Youth Commercial Sex Exploitation Victims: an Analysis within an Adjudicated Delinquent Sample

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Abstract
Existing criminology and victimization research suggests that youth victims of commercial sex often have mental health issues stemming from their sex victimization and/or emerging out of their long histories of family abuse, neglect and family conflict. However, what is not known is whether youth commercial sex victims, when compared to adjudicated delinquent, serious adolescent offenders, present unique mental health issues when they contact the juvenile justice system. We use the Pathways to Desistance longitudinal data that contains a sample of 1354 serious, adjudicated, juvenile offenders from Philadelphia, Pennsylvania and Phoenix, Arizona to address this question. According to our analyses, youths who had ever been paid for sex had significantly higher rates of several mental health disorders when compared to their high risk, adjudicated delinquent peers who had not engaged in commercial sex. We explain our findings concerning the potentially increased mental health diagnoses for youth commercial sex exploitation victims during and after their periods of adjudication.

Keywords Commercial sex exploitation · Juveniles · Mental health · Adjudicated youth

Since the publication of Weiner and Estes' research on youth's commercial sex exploitation in the United States (2002) and the passage of the federal Trafficking Victims Protection Act (TVPA) of 2000, researchers, lawmakers, criminal justice professionals and treatment providers have focused on understanding the mental health needs of sexually exploited youth (Reid and Piquero 2016). However, researchers still have limited knowledge on how victims of commercial sex exploitation (CSE) compare to other high-risk juveniles, like serious, adjudicated delinquent offenders. When compared to other, high-risk youth, are CSE victims' mental health diagnoses similar, greater or less? According to the Trafficking Victims Protection Act of 2000, "commercial sex exploitation is a commercial sex act induced by force, fraud, or coercion, *or in which the person induced to perform such an act has not attained 18 years of age*". Per this definition, any youth who has engaged in commercial sex (including prostitution, survival sex for drugs, food or a place to stay and pornography), is considered a victim of CSE and is not subjected to arrest. However, because this is a federal law and states differ in decriminalizing CSE, youth victims of CSE often come into contact with police and are found within juvenile justice institutions (National Conference of State Legislators 2014; Roby and Vincent 2017; Perkins and Ruiz 2017).

Prior research has treated CSE victims and serious, adjudicated delinquent youth as separate populations. However, as Reid and Piquero (2014a, b) find, these two high-risk groups overlap as youth involved in commercial sex also report significant involvement in delinquent activities (Chen et al. 2004; Mitchell et al. 2010; Whitbeck et al. 2004), both types of youths have lengthy histories of housing instability, parental abuse and abandonment (Dank 2011; Roe-Sepowitz 2012), and often suffer from co-occurring mental health disorders (Reid and Piquero 2016). However, Fong and Cardoso (2010) suggest that CSE victims are unique and that the service issues of CSE victims highlight their "unique experiences and special needs" including extensive histories of family violence, running away and homelessness. Our research bridges this gap in the extant research and assesses the extent to which, given similar experiences with family violence and adversity, do the mental health diagnoses of CSE victims differ from other high-risk, adjudicated delinquent youths?

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Understanding the possibly unique mental health diagnoses of CSE victims within a sample of high risk, serious adjudicated delinquent youths is important to help shape appropriate mental health treatment approaches for CSE victims in custody. To investigate whether youth CSE victims have unique mental health diagnoses when compared to their other high-risk, adjudicated delinquents, we analyzed data from the Pathways to Desistance longitudinal study of adjudicated youths from Philadelphia, Pennsylvania and Phoenix, Arizona.

Literature Review

Prior research on the mental health issues of CSE victims found that victimized youths often had elevated rates of mental health disorders ranging from depression to post-traumatic stress disorder (Macy and Johns 2011). Research has suggested that youths involved in CSE often had high rates of depression, anxiety, phobias, post-traumatic stress disorder (PTSD) self-harm and suicidal ideation (Clawson et al. 2009; Goldberg et al. 2017; Macy and Johns 2011). However, when prior mental health issues were addressed in conjunction with CSE victimization, research found that CSE victimization had significant, negative effects on mental health outcomes net of prior mental health issues (Hossain et al. 2010; Reid and Piquero 2016). Specifically, Reid and Piquero (2016) found that CSE victimization had an independent effect on higher rates of psychoticism while Hossain et al. (2010) found that CSE victimization had a significant effect on PTSD, anxiety and depression, net of prior experiences with physical and sexual abuse (see also, Hardy et al. 2013).

Sexually exploited youth often suffer from co-occurring conditions ranging from mood disorders, such as anxiety and depression, to mental illnesses, such as psychoticism, phobias, obsessive-compulsive disorder, and post-traumatic stress disorder, which may make successful treatment more challenging. Adding to potential challenges, Reid (2018) found that girls with intellectual disabilities had elevated risks of CSE victimization. Also, given the spectrum of mental health challenges that exploited youths face, suicidal ideation was not uncommon (Macy and Johns 2011). Clearly, the population of CSE victims has serious mental health issues, stemming from both their commercial sex victimization and adverse life events preceding their first episode of CSE. Although the breadth of mental health issues within CSE victims has been established, research has not determined whether CSE victims have unique mental health diagnoses when compared to other, adjudicated delinquent and high-risk youths (Underwood and Washington 2016).

Prior Victimization Histories of Commercial Sex Exploitation Victims

Commercial sex exploitation victims often have had lengthy histories of abuse and family instability and reported long histories of physical, emotional, and sexual abuse (Reid and Piquero 2016; Roe-Sepowitz 2012), as well as, parental deviance (Brawn and Roe-Sepowitz 2008; Reid and Piquero 2016). Research on CSE victims suggested that many CSE victims had dysfunctional families in which parental abuse, parental substance abuse and fighting within the home was widespread (Brawn and Roe-Sepowitz 2008; Reid 2012; Roe-Sepowitz 2012). Further, youths with long histories of maltreatment and parental deviance often have had contact with the child welfare system, and youths who have spent time in foster care appeared to be at heightened risk of CSE (Fong and Cardoso 2010; Varma et al. 2015). Family violence and dysfunction often preceded youth's CSE victimization and was a particular risk for youths experiencing crises surrounding violence, housing instability and street exposure. Examining a sample of youths involved in child welfare, O'Brien et al. (2017) found that CSE victims were significantly more likely than their peers to report running away from home. Other research has found that running away and/or time on the street often preceded CSE victimization for both males and females (Chen et al. 2004; Roe-Sepowitz 2012).

Research that examined the effects of preconditions related to the mental health of CSE victims, found that care giver stress, as well as, prior emotional, physical and sexual abuse by caregivers, often preceded entry into CSE (Chen et al. 2004; Reid and Piquero 2016). Commercial sexual exploitation victims also reported significant histories of witnessing violence in their communities, being victims of dating violence (Kennedy et al. 2012; Reid 2014) and sexual assault victimization outside of their families (Reid 2012). In fact, the Department of Health and Human Services (Clawson and Grace 2007) found such extensive victimization histories in CSE victims that they suggested that trauma informed services were critical in the aftercare treatment of CSE victims. This policy suggestion underscores the reality of the poly-victimization experiences that many CSE victims have suffered prior to, during and after their victimization in CSE.

Commercial Sex Exploitation Victims within the Juvenile Justice System

Although it has been 16 years since juvenile prostitution has been de-criminalized on the federal level, victims of CSE routinely have appeared in samples of adjudicated delinquent youth and within juvenile justice facilities. According to Finkelhor and Ormrod (2004), police across the United States routinely have contacted youth CSE victims as *offenders*. Results from the 3 years of NIBRS (National

Incident-Based Reporting Based System) data they reviewed suggested that police were more likely to come into contact with male CSE victims and that these male victims tended to be older than the female CSE victims. Importantly, male victims of CSE were more likely to be taken into custody and were less likely to be perceived as "victims" (Finkelhor and Ormrod 2004, p. 9). Similarly, Mitchell et al. (2010), in their analysis of the National Juvenile Prostitution Study, found that in 96% of cases involving juvenile girls, the girls were considered to be "victims" as opposed to only 77% of cases involving juvenile boys. According to their data, police were more likely to consider boys', as opposed to girls', involvement in CSE as delinquency. Both findings suggested that male victims of CSE were likely to be present among adjudicated delinquent populations.

Other research confirms that CSE victimization and delinquency overlapped, with CSE victims more likely than non-victims to be involved in drinking, drug use or other acts of delinquency related to their street life (such as loitering, vagrancy or running away) (Mitchell et al. 2007). Tyler et al. (2004) found that substance use and sexual trauma were commonly reported among their sample of 361 homeless or runaway girls who reported engaging in either trading sex or CSE victimization. Similarly, Brawn and Roe-Sepowitz (2008) found, within their sample of 128 adolescent girls charged with prostitution, those girls who reported using alcohol and/or drugs reported significantly less supervision at home and significantly greater childhood abuse and association with criminal peers (see also O'Brien et al. 2017). Mitchell et al. (2007), using community survey data of 1501 youths, found that youths who were solicited in person or online for sexual victimization also reported engaging in delinquency and using drugs or alcohol.

The research summarized above suggests that although youths victimized in CSE were to be treated as victims, this was not always the reality. Also, because youth victims of CSE may be substance users and may be involved in other acts of delinquency, they were likely to contact the juvenile justice system at some point. As such, we ask: do youths victimized in CSE represent a unique challenge in terms of mental health diagnoses, when compared to other adjudicated delinquent youths?

Method

Data

The current study uses data from the Pathways to Desistance study (Mulvey 2013). The Pathways to Desistance study is a multi-site, longitudinal study of serious, adjudicated delinquent juvenile offenders. Participating youth in the study were found guilty of a serious offense in a juvenile or adult court between the ages of 14 to 18 in either Maricopa County, Arizona or Philadelphia County, Pennsylvania. After completing a baseline assessment, the participants were interviewed every 6 months for the next 3 years. After the initial three survey years, the participants were interviewed every 12 months for another 4 years. As a result, there are 7 years of data and a total of eleven data collections points (including the baseline assessment). The original sample consists of primarily boys (86.4%) who identify as African American (41.4%) with a mean age of 16.4 years old at baseline. More information regarding the data and measures used can be found at www.pathwaysstudy.pitt.edu.

Sample

Given this paper's focus on juveniles with a history of CSE and their mental health issues, the sample was limited to those juveniles who were 14 to 16 years old at baseline and 16 to 18 years old at the 24th month follow-up. This ensures that any CSE victimization and mental health diagnoses occurred prior to (or soon after) becoming an adult and while still involved in the juvenile justice system. Demographic and control variables were measured at baseline, and the variable of interest "ever paid for sex" was measured at the 24-month follow-up. Using the 24-month follow-up point allowed for a longer recall period for involvement in commercial sex. The outcome variables of mental health diagnoses were measured using the 24-month follow-up data.

The data set contains 829 youth between 14 to 16 years old at baseline and 16 to18 years old at the 24-month follow-up. The final analytic sample contains 452 youth. Of the 377 missing cases, 181 (48.01%) were missing data for the dependent variables (mental health diagnoses). An additional 70 (12.57%) were missing data regarding mental health outcomes and CSE. The remaining 126 (33.42%) omitted cases were missing data for the other variables included in the final model. Bivariate comparisons of the missing cases and analytic sample revealed that the analytic sample was not significantly different from the missing cases with the exception of race. Specifically, the analytic sample had significantly more White youths, X^2 (2, $N = 829$) = 7.30, $p < .05$.

Variables

Dependent Variables Mental health diagnoses were measured using responses on the Brief Measurement Inventory (BSI) (Derogatis and Melisaratos 1983). The BSI asks respondents a series of questions related to somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobia, paranoia, and psychoticism. For each condition, respondents were asked the extent to which they have been bothered by various symptoms on a scale of 0–4 (0 = not at all, 4 = extremely). Respondents' scores were

then averaged and used to create a dichotomous variable representing a clinically significant score. This procedure was outlined in the BSI manual (Derogatis and Melisaratos 1983). In sum, if the respondent's score was higher than the norms provided in the appendix, the respondent was considered to have a clinically significant score. These nine dichotomous variables were then summed to create a variable representing the total number of mental health conditions with a clinically significant BSI score.

Commercial Sex Exploitation Victimization Any experience with CSE was measured using a question from the Self-Reported Offending measure. If respondents answered "yes" to the question, "Have you been paid by someone for having a sexual relationship with them?" at any of the data collection points up to 24-months, they were considered to have been the victim of CSE.

Independent Variables Given the past research on victims of CSE and adjudicated youths, we know that older youths, minority youth, youths whose families experience dysfunction and financial strain and youths who have dropped out of school are more likely to be victims of CSE and be present in the juvenile justice system. Therefore, we control for age, gender, race, and educational status at baseline. *Age* at baseline and *gender* (0 = female; 1 = male) were used for age and gender respectively and *race* was measured as white vs. non-white (0 = non-white; 1 = white). Whether or not the participant was enrolled in school at baseline was used as a measure of *educational status*. We used the variable *financial help* to measure whether the youth had to ask family or friends for money during the study years. Prior research suggests that victims of CSE often emerge out of chaotic and/or abusive homes, so we included measures of maternal hostility, mother's substance use and parental incarceration to control for dysfunctional family characteristics (Estes and Weiner 2005). Also, because many of the youths in the sample have a variety of family arrangements (single mothers, grandparent caregivers, step-parents, foster care), measures of father's attitudes and behavior often had a high number of missing cases. For this reason, we used measures of mother's behavior as a proxy for family dynamics. *Mother's hostility* was adapted from "The Quality of Parental Relationships Inventory" (Conger et al. 1994). Respondents were asked to answer "never", "sometimes", "often", or "always" to nine items assessing maternal hostility. An example is "How often does your mother get angry at you?" Their score represents the mean of their responses and respondents must have valid responses for seven of the nine items to receive a score. The scale has an alpha reliability score of .92. Higher scores indicate higher levels of mother's hostility. Both *mother's substance abuse* and *parental arrest or incarceration* were measured as dichotomous variables (0 = no history; 1 = past or current history).

Analytic Strategy

To assess bivariate relationships between CSE victimization and all categorical variables, a series of chi-square tests were used. To assess bivariate relationships for our continuous or count variables, t-tests of CSE and age at baseline, mother's hostility, and number of clinical diagnoses were calculated. For the multivariate analysis of the nine dichotomous mental health diagnoses, analyses were performed using logistic regression. Coefficients were reported as odds ratios to express the change in odds associated with each independent variable. For the count variable of total number of clinical diagnoses, analyses were performed using negative binomial regression. A Poisson model was considered but after comparing the fit statistics and graphing the observed proportions along with the probabilities of both Poisson and negative binomial probabilities of the count variable, (using the *nbvargr* command in STATA 13) the negative binomial model was found to be a better fit (StataCorp 2014).

Results

Descriptive Analyses

Table 1 (see Appendix) includes the means, percent, and range of all variables on the 452 respondents included in the analyses. Approximately 4% of the sample reported being the victim of CSE. The average age of respondents was 15.29 years, and the sample was predominantly non-white and male. Nearly 35% of the sample reported asking family or friends for financial help. Substance abuse by the mother was reported for approximately 37% of the sample and 44% reported having a parent who had been arrested or jailed. Mother hostility ranged from 1.11 to 4.00 with a mean of 3.17, indicating a relatively high level of mother hostility in this sample. These numbers indicate that approximately 30 to 45% of youths in our pathways sample reported significant family stressors and dysfunction.

Table 2 (see Appendix) also shows the frequencies of the nine diagnoses included in the regression models. Hostility and depression were the most common diagnoses and were present in 5% of cases. Just over 3% of respondents were diagnosed with either psychoticism or paranoia, and psychoticism was the least common diagnosis, only present in 2.65% of cases. The range for total number of diagnoses ranged from 0 to 9; however, due to the fact that 87.8% of the sample did not have a diagnosis, the mean was .31. Mother hostility and number of clinical diagnoses were the only continuous variables with a significant bivariate relationship with CSE. Mother hostility scores were higher among those with a history of CSE, $t\ (450) = -2.08$, $p < .05$. The number of clinical diagnoses were also higher among those with a history of

CSE, t (450) = −2.46, $p < .05$. There was not a significant difference in age at baseline across CSE experience.

Relationships between CSE victimization and race, gender, asking family/friends for financial help, history of parent arrest or incarceration, being currently enrolled in school, anxiety, and interpersonal sensitivity were not significant. Table 3 (see Appendix) contains the chi-square results for the variables significantly related to CSE. There was a higher rate of mother's substance abuse among those who had experienced CSE. Among the nine clinical diagnoses, rates of diagnosis were higher for depression, obsessive compulsive disorder., hostility, phobias, paranoia, and psychoticism.

Logistic and Negative Binomial Regression Results

Logistic regression results can be found in Table 4 (see Appendix). We report all of our analyses but only discuss those models that were significant in the text. In Model 1, a clinical diagnosis of depression was regressed on all independent variables. The odds of being diagnosed with clinical depression were 9.83 times higher for respondents who have been the victim of CSE. The only other statistically significant coefficient was financial help, with the odds of being diagnosed with depression for those who have received financial help from friends or family being 3.00 times higher. In terms of the context of these findings, net of traditionally significant correlates of youth's mental health (family dysfunction, poverty, educational failure), CSE victimization had a marked effect on increased clinical depression among adjudicated youth. As a reminder, this is not a community sample of youths but youths who were juvenile justice involved. CSE victimization was an extremely strong risk factor for depression among these youths. Although we believe these relationships makes sense, the magnitude of change should be interpreted with caution as they are exaggerated due to the small cell size for those with CSE experience and a clinical diagnosis for depression or psychoticism.

In Model 2, obsessive compulsive disorder was regressed on all independent variables. Being the victim of CSE was associated with a 4.88 times increase in the odds of being diagnosed with clinical OCD when compared to those who did not have a history of CSE. Male respondents and youths who were enrolled in school were significantly less likely to receive an OCD diagnosis when compared to female respondents and those not enrolled in school. Once again, this was important because when we control for traditionally significant predictors of youth's mental health, CSE victimization still exhibited a large effect on increasing a clinical obsessive compulsive diagnosis.

Model 3 shows the odds of receiving a hostility diagnosis. The odds of receiving a clinical diagnosis for hostility were 4.22 times higher among youth with a history of CSE when compared to those without a history of CSE victimization. The odds of receiving a hostility diagnosis were 61% lower for male respondents when compared to female respondents.

Similarly, model 4 shows that the odds of a clinical diagnosis of paranoia were higher for victims of CSE and female respondents. Specifically, victims of CSE experienced a 4.86 times increase in the odds of a clinical diagnosis when compared to those who were not a victim of CSE. Both of these models suggest that even after controlling for other factors, victims of CSE, especially female respondents were at higher risk for a clinical mental health diagnosis.

Model 5 shows the odds of receiving a psychoticism diagnosis. The odds of receiving a clinical psychoticism diagnosis were 9.69 times higher among youth with a history of CSE when compared to those without a history of CSE victimization. The odds were 3.41 times higher for youth who had a parent who was arrested or jailed when compared to those who did not have a parent arrested or jailed.

Results from the negative binomial regression of the count of clinical diagnoses on the independent variables can be found in Table 5 (see Appendix). Being the victim of CSE was significantly associated with a greater number of diagnoses, with the incident rate of CSE victims being 7.90 times higher than non-victims. The only other significant variable was gender, with males having an incident rate of diagnoses that was 63% lower than females. As with logistic regression findings, CSE victimization resulted in a unique and significant positive effect on the number of mental health diagnoses, net of other traditionally correlated risk factors like maternal hostility, financial strain, school failure and parental incarceration. These results taken altogether show the strong relationship between CSE victimization and various mental health diagnoses. This sample is comprised of youth classified as serious offenders. Although CSE victims and other serious adjudicated youths share similar backgrounds of family dysfunction, poverty, and abuse, the experience of CSE victimization results in a sizeable and significant positive effect on mental health diagnoses such as depression, hostility, obsessive and compulsive disorder, paranoia, and psychoticism. Taken together, youth victims of CSE are at appreciable increased risk of several mental health diagnoses that might create challenges both inside juvenile justice facilities and within communities upon release.

Discussion and Conclusion

Youth CSE victims report incredibly adverse backgrounds that reference parental abuse, victimization and financial adversity. They also appear to be at a significantly increased risk for developing one or more, clinical mental health diagnoses. Specifically, being the victim of CSE results in a significant increase in the likelihood of receiving a clinical diagnosis of depression, hostility, obsessive-compulsive disorder,

paranoia, and/or psychoticism. Even after various control variables were added, not only was being the victim of CSE statistically significant, but other control and substantive variables were rarely significant. The mental health picture our analyses paint for youth victims of CSE within an adjudicated sample is bleak. CSE victims, even when compared to the mental health outcomes of delinquent youths who were adjudicated for serious property and violent crime had significantly elevated rates of depression, hostility, paranoia, obsessive-compulsive disorder and psychoticism. Commercial sex exploitation victims were also significantly more likely than their adjudicated peers to have had more than one clinical diagnosis, suggesting the presence of co-occurring mental health challenges within this population.

Any of these clinical diagnoses can make compliance within juvenile justice difficult and surviving life in and outside of institutions, challenging. Youths with high mental health needs are more likely to pose behavioral problems while institutionalized and are more likely to recidivate when released (Foster et al. 2004; Pullman et al. 2006). It is clear that CSE victims, although a small subset of adjudicated delinquent youths, clearly are at risk for significant mental health challenges. Our research makes the point that net of adverse family backgrounds, CSE victims suffer disproportionately from depression, hostility, paranoia, obsessive-compulsive disorder and psychoticism. Although our results are preliminary and need additional replication, the implications for policies regarding screening for mental health issues by type of crime the youth admits engaging in seem warranted (Salisbury et al. 2015).

Perhaps at intake, clinicians can screen youths for involvement in commercial sex and flag them for potentially elevated rates of mental health challenges. Such a screening process may open up possibilities that youths with CSE victimization experiences could receive much needed cognitive and drug therapy to address their past trauma and future mental health needs. Clearly, given their poly-victimization experiences and elevated rate of mental health diagnoses, CSE victims may benefit from trauma informed care and policy (Salisbury et al. 2015) to address their adverse experiences within and outside the family. However, our research also raised a question that should be addressed before treatments are designed: Are the elevated rate of clinical diagnoses for CSE victims due primarily to prior aversive family and home conditions or dependent on the CSE victimization experience? We ran additional analysis and found that while aversive and abusive family conditions predicted selection into CSE, the experience of CSE victimization exerted independent, significant, negative effects on youths' worsening mental health. So, while many youths involved in the juvenile justice system report significant rates of early, adverse experiences, the experience of CSE victimization is particularly and independently traumatic for youths' mental health outcomes. Future treatment protocols should address both distal childhood adversity experiences, as well as, more proximal victimization experiences such as CSE victimization.

Strengths, Limitations and Direction for Future Research

Research has begun to chronicle the difficulties CSE victims face when they encounter the juvenile justice system and a strength of our research is that we investigate how significant CSE victimization is on the mental health of youths who are already high-risk. To be included in the data we use, individuals had to be a serious, adjudicated delinquent youth. These are youths who populate the juvenile court and juvenile justice systems and often have severe histories of parental dysfunction, school failure and economic stressors. Even within this highly selective sample, experiencing CSE victimization has a strongly significant effect on meeting the clinical threshold for a diagnosis of depression, hostility, obsessive-compulsive disorder, paranoia, and/or psychoticism. Additionally, CSE victims were significantly more likely to have more than one of these clinical diagnoses. This paints the picture of a subpopulation of juvenile justice involved youth with extremely high levels of mental health needs. The nature of the data, with youths involved in serious acts of delinquency but most of whom have not experienced CSE victimization is also a strength of our research. Other CSE victimization research has focused solely on samples of CSE victims and thus comparisons to other high-risk youth cannot be made.

We face two limitations with our research. First, a critically important question remains regarding the possible, significant gender interaction between gender CSE victimization and the occurrence and type of mental health outcomes youth report. Prior research indicates that girls are more likely to be CSE victims in adolescence than are boys (Varma et al. 2015) and that girls, when compared to boys, are more likely to enter juvenile justice for status offenses, low level property crimes or sex-related victimization experiences (Kempf-Leonard and Johansson 2007). It is possible that female and male CSE victims differ in the type and severity of their clinical diagnoses and future research should attempt to tackle this issue. However, new data will be needed to tackle this issue as the number of girls who reported CSE victimization before age eighteen in the Pathways data is too small to be analyzed separately. Second, although this is a serious, adjudicated delinquent sample, the number of CSE victims is small. Thus, although our findings are strong, they should be investigated in the future with data that includes greater numbers of victims.

Our findings must also be considered given the non-criminal status of CSE victimization for youths even though these youths are clearly present within adjudicated delinquent samples as our data show. Across many jurisdictions, victims

of CSE are to be treated as *victims* and not criminals. However, given their precarious lives on the street, in unstable living situations or within highly dysfunctional family environments, CSE victims often find themselves taken into custody and adjudicated delinquent for non-CSE offenses. As such, it remains critical that juvenile justice professionals from police officers to judges to case workers consistently screen for involvement in CSE when taking a youth into custody (Salisbury et al. 2015). Identification of CSE victims is critical if youths are to receive appropriate, trauma informed services and to insure that juvenile facilities are equipped to handle their potentially elevated mental health needs.

Table 2 Clinically significant mental health diagnoses across sample

Mental health outcomes with M(SD)	N(%)
Depression	14(3)
Anxiety	19(4)
O.C.D.	23(5)
Interpersonal sensitivity	9(2)
Hostility	23(5)
Phobia	15(3)
Paranoia	16(4)
Psychoticism	12(3)
Somatization	15(3)
Total number of diagnoses 1.61(.44)	

Appendix

Table 1 Descriptive characteristics of sample ($N = 452$)

Variables with M(SD)	N(%)
CSE victim	
Yes	18(4)
No	434(96)
Age 15.29(.78)	
14	92(20)
15	136(30)
16	224(50)
Race/Ethnicity	
Non-white	337(74)
White	117(26)
Gender	
Female	70(15)
Male	382(85)
Enrolled in school	
Yes	355(79)
No	97(21)
Family/Friend financial help	
Yes	154(34)
No	298(66)
Mother substance abuse	
Yes	165(37)
No	287(64)
Parent arrest	
Yes	199(44)
No	253(56)
Mother hostility 1.60(.44)	

Table 3 Cross-tabulation results of commercial sex exploitation

	Experienced CSE		
	No	Yes	*p*
Mothers substance abuse			.027
No	280 (64.5)	7 (38.9)	
Yes	154 (35.5)	11 (61.1)	
Depression			.045
No	422 (97.2)	16 (88.9)	
Yes	12 (2.8)	2 (11.1)	
OCD			.023
No	414 (95.4	15 (83.3)	
Yes	20 (4.6)	3 (16.7)	
Hostility			.023
No	414 (95.4	15 (83.3)	
Yes	20 (4.6)	3 (16.7)	
Phobia			.060
No	421 (97.0)	16 (88.9)	
Yes	13 (3.0)	2 (11.1)	
Paranoia			.076
No	420 (96.8)	16 (88.9)	
Yes	14 (3.2)	2 (11.1)	
Psychoticism			.023
No	424 (97.7)	16 (88.9)	
Yes	10 (2.3)	2 (11.1)	

Table 4 Logistic regression of clinical diagnoses ($N = 452$)

	Model 1: Depression				Model 2: OCD				Model 3: Hostility				Model 4: Paranoia				Model 5: Psychoticism	
	OR	95% CI		*P* value	OR	95% CI		*P* value	OR	95% CI		*P* value	OR	95% CI		*P* value	OR	95% CI
Commercial sex exploitation	10.83	1.63	71.85	0.014	5.88	1.34	25.73	0.019	5.22	1.24	21.91	0.024	5.86	1.00	34.26	0.05	10.69	1.60
Age at baseline	1.90	0.79	4.58	0.153	1.40	0.75	2.60	0.288	1.03	0.59	1.80	0.927	1.68	0.77	3.67	0.191	1.27	0.57
White	1.39	0.40	4.80	0.605	1.86	0.73	4.75	0.196	0.92	0.34	2.52	0.877	1.01	0.31	3.27	0.986	0.73	0.18
Male	0.59	0.15	2.40	0.465	0.35	0.13	0.94	0.038	0.39	0.15	1.02	0.054	0.37	0.12	1.18	0.092	0.52	0.13
Enrolled in school	0.40	0.13	1.26	0.116	0.42	0.17	1.05	0.063	0.95	0.35	2.60	0.918	0.50	0.17	1.47	0.21	0.59	0.17
Family/Friend financial help	4.00	1.15	13.94	0.03	1.27	0.51	3.20	0.605	1.97	0.81	4.79	0.136	2.41	0.81	7.21	0.114	3.25	0.90
Mom substance abuse	1.46	0.44	4.77	0.536	1.05	0.41	2.69	0.92	1.13	0.45	2.84	0.799	1.18	0.39	3.59	0.766	1.51	0.43
Parent arrested or jailed	1.77	0.54	5.73	0.344	1.95	0.78	4.92	0.155	1.39	0.57	3.41	0.468	2.91	0.93	9.15	0.067	4.41	1.07
Mother hostility	0.25	0.05	1.29	0.097	0.95	0.36	2.46	0.911	1.10	0.44	2.77	0.841	1.02	0.34	3.07	0.975	0.55	0.13

	Model 5: Psychoticism		Model 6: Anxiety				Model 7: Interpersonal sensitivity				Model 8: Paranoia				Model 9: Somatization			
	95% CI	*P* value	OR			*P* value	OR	95% CI		*P* value	OR	95% CI		*P* value	OR	95% CI		*P* value
Commercial sex exploitation	71.20	0.014	1.58	0.18	14.26	0.683	4.02	0.37	43.94	0.255	3.47	0.55	21.82	0.186	4.02	0.69	23.30	0.12
Age at baseline	2.83	0.564	0.89	0.48	1.67	0.721	1.26	0.50	3.21	0.621	0.69	0.34	1.38	0.295	0.82	0.42	1.62	0.573
White	3.07	0.672	0.82	0.27	2.49	0.725	0.56	0.11	3.00	0.5	0.50	0.13	2.00	0.33	0.41	0.09	1.92	0.258
Male	2.14	0.369	0.32	0.11	0.87	0.027	0.70	0.13	3.66	0.675	0.40	0.12	1.32	0.133	0.26	0.08	0.80	0.019
Enrolled in school	2.05	0.408	0.43	0.16	1.16	0.094	0.77	0.18	3.40	0.733	0.32	0.10	0.98	0.047	0.59	0.18	1.91	0.377
Family/Friend financial help	11.69	0.071	1.61	0.61	4.29	0.337	4.19	0.97	18.16	0.055	1.61	0.53	4.90	0.398	1.51	0.50	4.59	0.468
Mom substance abuse	5.26	0.518	1.66	0.60	4.57	0.329	1.57	0.38	6.54	0.537	1.60	0.49	5.21	0.431	1.67	0.54	5.19	0.374
Parent arrested or jailed	18.13	0.04	2.33	0.82	6.64	0.114	1.50	0.36	6.23	0.576	2.76	0.79	9.60	0.111	1.01	0.33	3.06	0.991
Mother hostility	2.25	0.403	0.89	0.31	2.54	0.822	1.14	0.27	4.84	0.856	2.29	0.89	5.93	0.087	0.72	0.20	2.60	0.617

OR odds ratio, *CI* confidence interval

Table 5 Negative binomial regression of the number of clinical diagnoses ($N = 415$)

	IRR	95% CI		*P* value
Commercial sex exploitation	8.90	1.84	43.00	0.007
Age at baseline	1.06	0.66	1.72	0.799
White	0.99	0.43	2.25	0.974
Male	0.37	0.14	0.97	0.043
Enrolled in school	0.58	0.24	1.38	0.215
Family/Friend financial help	2.07	0.99	4.33	0.054
Mom substance abuse	1.66	0.77	3.57	0.192
Parent arrested or jailed	1.71	0.78	3.78	0.183
Mother hostility	1.05	0.43	2.56	0.909
Observations	8.90	1.84	43.00	0.007

IRR incident rate ratios, *CI* confidence intervals

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