

Gender Differences in the Associations Among Sexual Abuse, Posttraumatic Stress Symptoms, and Delinquent Behaviors in a Sample of Detained Adolescents

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Abstract Sexual abuse (SA) is highly prevalent among detained youth and is associated with a number of deleterious outcomes associated with self-regulation deficits; however, less is known about the consequences of SA for boys. Thus, the current study examined posttraumatic stress symptoms (PTSS) and associated symptoms in a sample of detained youth (612 boys, 214 girls). 9.2 % of boys and 51.0 % of girls endorsed SA. There were no gender differences in rates of symptoms endorsed by sexually abused girls and boys; however, sexually abused boys reported higher rates of symptoms in comparison to non-sexually abused boys. Results indicated that, for boys only, there were significant indirect effects of emotion dysregulation (ED), borderline personality features (BP), and dissociation on the association between SA and PTSS. Additionally, there was a significant, indirect effect of BP on the association between SA and delinquent behaviors for both boys and girls.

Keywords Sexual abuse · Posttraumatic stress · Delinquency · Adolescence

Childhood sexual abuse (SA) imparts a high toll on youth, families, and society at large. The cost of child maltreatment is estimated at approximately \$210,012 per victim (Fang et al. 2012), which includes the consequent needs for mental health treatment, medical care, social services, and criminal justice processing. Further, a wealth of cross-sectional and longitudinal studies have confirmed that experiencing sexual violations

during childhood confers risk for a host of negative psychosocial outcomes, such as poor emotional and physical health (Maniglio 2009; Fergusson et al. 2013; Trickett et al. 2011), psychological distress, including posttraumatic stress symptoms (PTSS; Cohen et al. 2004; Molnar et al. 2001; Trickett et al. 2011), disrupted interpersonal relationships, academic difficulties (Trickett et al. 2011), and delinquency (Dierkhising et al. 2013; Feiring et al. 2007; Herrera and McCloskey 2003; Layne et al. 2014; Trickett et al. 2011).

To date, much of what we know about the psychosocial outcomes of SA comes from samples of women and girls. SA is more prevalent among girls and women across the lifespan (Briere and Elliott 2003; Finkelhor et al. 2014). In a sample of older adolescents in the United States, Finkelhor and colleagues (2014) found that the lifetime prevalence of SA and sexual assault was 26.6 % for girls, compared to 5.1 % for boys. This gender disparity also holds true among high-risk samples of youth, such as those involved in the justice system. Studies of detained samples find that girls are as much as ten times more likely than boys to report having experienced SA (Ford et al. 2008; Kerig and Becker 2012; Kerig and Schindler 2013; Wood et al. 2002). Because of this robust gender disparity, investigators have primarily focused on the psychosocial outcomes of SA among girls rather than boys, with very few studies examining the consequences of SA among boys and men (Breiding et al. 2014; Easton et al. 2014). For example, many of the seminal large-scale studies of sexual violence have included only women or girls (Cuevas and Sabina 2010; Fisher et al. 2000; Trickett et al. 2011). Subsequently, we know little about the SA experiences of boys and whether theories delineating the mechanisms underlying the association between SA and negative outcomes are relevant for boys as well as girls.

To date, many investigators have conceptualized the negative outcomes observed among sexually abused girls as

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stemming from deficits in self-regulation (Marx et al. 2005; Walsh et al. 2012). For example, Marx and colleagues (2005) proposed that the uncontrollable and unpredictable nature of SA leads to a set of conditioned responses that are characterized by fear and arousal, which in turn leads to the use of unhealthy coping strategies (e.g., substance abuse, dissociation, emotional numbing, self-harm, etc.). Subsequently, engagement in these unhealthy coping strategies likely explains why many victims of SA go on to experience a host of negative outcomes across their lifespans. Similarly, reigning theories of posttraumatic stress (Ford 2013; Frewen and Lanius 2006; Horowitz 2011) suggest that child maltreatment, including SA, adversely affects a child's ability to regulate across cognitive, affective, and behavioural domains. In support of these theories, prior studies have found that many facets of self-regulation (i.e., emotion dysregulation, dissociation) are implicated in the relationship between SA and a cascade of negative outcomes including PTSS (Goldsmith et al. 2013; Gutiérrez Wang et al. 2011; Tull et al. 2007) and delinquent behaviors (Burnette and Reppucci 2009).

Consistent with these theories, investigators have identified a constellation of symptoms rooted in self-regulation deficits that are prominent among girls with SA histories. Specifically, this constellation of symptoms includes emotion dysregulation (Bennett and Kerig 2014; Chaplo et al. 2015; Shipman et al. 2000), PTSS (Fergusson et al. 2013; Trickett et al. 2011), dissociation (Bernier et al. 2013; Plattner et al. 2003; Trickett et al. 2011), and borderline personality features (Blonigen et al. 2012; Burnette and Reppucci 2009). These symptoms have been notably high among sexually abused girls in longitudinal studies (Trickett et al. 2011). Similarly, in studies of maltreated youth, girls also show higher levels of emotion dysregulation, dissociation, and PTSS when compared to boys (Chaplo et al. 2015; Kennedy et al. 2015; Walker et al. 2004; Zona and Milan 2011). Furthermore, borderline personality features, in particular, have been noted to be more prevalent among girls than boys, and to be associated with sexual abuse among women and girls (Bradley et al. 2005; Kaehler and Freyd 2012).

This pattern of findings has likely led many investigators and clinicians alike to believe this particular pattern of post-SA symptoms are gender-specific. Unfortunately, very few studies have specifically examined whether gender differences in this constellation of symptoms exist, leaving it unclear if these symptoms are actually gender-specific among sexually abused youth. One exception is a study of dissociative symptoms among sexually abused preschoolers (Bernier et al. 2013). These investigators found that, in comparison to sexually abused girls, sexually abused boys exhibited more dissociative symptoms 1 year after their SA disclosures. Similarly, in a sample of sexually abused preschoolers, mothers and teachers rated sexually abused boys as higher in emotion regulation deficits than sexually abused girls (Langevin et al.

2016). However, no known studies to date have examined gender differences in borderline personality features among sexually abused youth. Overall, the extant literature suggests that there may be gender differences in the outcomes of SA; however, the lack of research on these specific symptoms has yet to be addressed, especially in high-risk samples of youth.

Apart from gender differences in symptom outcomes, another gap in the literature concerns whether or not the same mechanisms linking SA and negative outcomes, such as delinquency, are implicated for both sexually abused boys and girls. Although child maltreatment has generally been identified as a risk factor for justice system involvement among boys and girls (Ford et al. 2008; Kerig and Becker 2012, 2015), the extant research has primarily identified SA specifically as a contributor only to girls' delinquency (Belknap and Holsinger 2006; Herrera and McCloskey 2003; Kerig and Becker 2012; Kerig and Schindler 2013; Penney et al. 2010). For example, among a sample of school-aged girls, Herrera and McCloskey (2003) found that SA, compared to physical abuse and domestic violence exposure, was the strongest predictor of girls' delinquent behaviors in adolescence. Furthermore, emotion dysregulation, dissociation, borderline personality features, and PTSS have also been implicated theoretically and empirically as mechanisms linking SA and delinquent behavior among girls (Burnette and Reppucci 2009; Kerig and Schindler 2013; Walsh et al. 2012). For example, Burnette and Reppucci (2009) found that borderline personality features mediated the relation between child maltreatment and aggression in a sample of incarcerated girls. Unfortunately, no studies to date have examined the specific associations between SA and delinquency among boys, or whether this same constellation of symptoms also underlies the association between SA and delinquency for boys. Instead, most of the extant literature focusing on the connection between SA and delinquency among boys has focused on sexual violence perpetration specifically (van der Put et al. 2015) rather than delinquent behaviour more broadly. Given that rates of sexual violence perpetration are particularly low among girls compared to boys (Ybarra and Mitchell 2013), focusing on broader conceptualizations of delinquency, such as youths' legal charges and self-report of their delinquent behaviors, may help to elucidate whether or not this constellation of symptoms underlies SA and delinquent behavior for both boys and girls.

One challenge of studying gender differences in the outcomes of SA, as well as mechanisms linking SA and delinquency, is finding samples including sufficient numbers of boys who have experienced SA. Justice-involved youth are an especially appropriate sample for investigating these issues. Justice-involved youth present with disproportionate rates of trauma exposure in general (Ford et al. 2008; Kerig and Becker 2012; Kerig et al. 2012), and SA in particular (Kerig and Becker 2012; Martin et al. 2008; Wood et al. 2002), even

among boys (Dierkhising et al. 2014). For example, in a sample of previously detained young adult males, 38.7 % percent endorsed a history of maltreatment (including child physical abuse, SA, or neglect) prior to their juvenile justice involvement, and as many as nine percent endorsed experiencing SA in some form while detained (Dierkhising et al. 2014). Hence, we examined our hypotheses in a sample of justice-involved youth where SA may not be solely a female problem.

To summarize, the current study had two aims. The first aim of the study was to determine whether sexually abused girls and sexually abused boys exhibited similar levels of a constellation of symptoms rooted in self-regulation deficits (i.e., posttraumatic stress, borderline personality features, dissociation, and emotion dysregulation) that has been commonly associated with SA amongst girls. To address this aim, we investigated whether there were differences in levels of these symptoms comparing sexually abused youth and non-sexually abused youth. We hypothesized that sexually abused youth would have greater levels of symptoms than youth without SA histories, and that this difference would hold when making comparisons across gender. Our second aim was to determine whether borderline personality features, dissociation, and emotion dysregulation acted as statistical mechanisms in the associations between SA and posttraumatic stress, and between SA and delinquency. We also examined whether or not these patterns differed by gender. We expected that emotion dysregulation, borderline personality features, and dissociation would statistically mediate the relation between SA and PTSS for both boys and girls given theory, suggesting that deficits in self-regulation also underline posttraumatic stress (Ford 2013; Frewen and Lanius 2006; Horowitz 2011). Further, given that past research has implicated child maltreatment in both boys' and girls' involvement in the justice system (Ford et al. 2008; Kerig and Becker 2012, 2015), we expected that emotion dysregulation, borderline personality features, and dissociation would statistically mediate the relation between SA and delinquent behaviors for both boys and girls.

Method

Participants and Procedure

Participants included 826 youth (214 girls, 612 boys) recruited from a juvenile detention center in the Western United States. Youth ranged in age from 12 to 19 years ($M = 16.12$, $SD = 1.29$). Participants were ethnically diverse; 53.3 % were White/Caucasian, 26.4 % Hispanic/Latino, 5.0 % Black/African American, 3.8 % Pacific Islander/ Native Hawaiian, 3.8 % Native American, 0.8 % Asian American, and 7.1 % multiracial/other. Legal guardians were approached during visiting hours and invited to provide informed consent for

their youth to participate. After guardians provided informed consent, youth were then invited to give assent. Additionally, our institutional review board approval included a certificate of confidentiality, and therefore, youth and their guardians were informed that the investigators could not disclose any identifying information obtained from the study, including a court subpoena. Youth completed self-report questionnaires in a private visiting room with a trained graduate or undergraduate research assistant. In order to avoid the possibility of coercion, participants were not offered compensation for their participation in the study.

Measures

Sexual Abuse, Non-Sexual Trauma Exposure, and Posttraumatic Stress The UCLA Posttraumatic Stress Disorder Reaction Index-Adolescent Version (PTSD-RI; Steinberg et al. 2004, 2013) is a well-validated measure of lifetime trauma exposure and past month posttraumatic stress symptoms corresponding to DSM criteria for PTSD (American Psychiatric Association 2013). Youth are asked to endorse a range of both interpersonal and non-interpersonal trauma exposures. In regard to SA, youth are asked to respond to the following three questions: “*Have you ever had an adult or someone much older touch your private sexual body parts when you didn’t want them to?*”; “*Were you ever forced to have some form of sexual contact, such as touching or having sex, by someone you cared a lot about?*”; “*Were you ever...by someone you didn’t care a lot about?*” Youth who endorsed one or more of these questions were categorized as being sexually abused. A subset of youth ($n = 382$) were asked to specify how many times any of these three events happened over three developmental periods: ages zero to five, ages six to eleven, and age 12 and older. There were no differences between this subset of youth and the larger sample on any study variables apart from youth age, with youth in this subsample being slightly younger than the full sample, $M = 15.95$, $SD = 1.29$. Additionally, a total score for non-sexual trauma was calculated for each participant based on their endorsement of non-sexual traumas (i.e., physical abuse, emotional abuse, witnessing family or community violence).

After answering about lifetime trauma exposure, youth rated their posttraumatic stress symptoms over the past 30 days on 32 items (corresponding to both DSM-IV and DSM-5 criteria) using a Likert scale ranging from 0 (*none of the time*) to 4 (*most of the time*). A total score of posttraumatic stress symptoms were used in the present analyses, $\alpha = .94$. Additionally, youth’s scores on past month symptoms were used to determine the likelihood that youth met full or partial DSM-5 criteria for PTSD to provide further descriptive information on youth with and without SA histories, as well between girls and boys with SA histories. Full PTSD requires

that youth meet criteria all for all symptom clusters (criteria A, B, C, D, and E), whereas partial PTSD criteria is defined as meeting criterion A and three of the four symptom clusters. Only a subset of youth ($n = 535$) had DSM-5 data available, as these items were included in the study after revisions to DSM criteria (APA 2013).

Emotion Dysregulation The Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer 2004) is a well-validated self-report measure intended to assess multiple dimensions of emotion dysregulation, and has been validated in adolescent samples (Neumann et al. 2010). The DERS consists of 36 items, each of which is rated on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*), with higher scores indicating greater dysregulation. The present analyses used the total score comprised of all of the items, $\alpha = .92$.

Borderline Personality Features The *Borderline Personality Features Scale – Children* (Crick et al. 2005) is a downward extension of scales on the Personality Assessment Inventory, which assesses Affective Instability, Identity Problems, Negative Relationships, and Self-Harm. Each of the 24 items is scored on a scale from 1 (not at all true) to 5 (always true). A total score comprised as a sum of all 24 items was used in the present analyses, $\alpha = .87$.

Dissociation The Adolescent Dissociative Experiences Scale (A-DES II; Armstrong et al. 1997) is a well-validated self-report measure that assesses four dimensions of dissociation: absorption and imaginative involvement, amnesia, depersonalization and derealization, and passive influence. Each item is rated on an 11-point scale from *never* (0) to *almost always* (10). In order to maximize the sample size, only the depersonalization/derealization scale was used in the present study, $\alpha = .87$, as these kinds of experiences are indicative of severe dissociation and only present in a subset of individuals (Lanius et al. 2014).

Delinquent Behaviors Self-reported delinquency was measured with the 33-item Self Report of Delinquency (Elliott and Ageton 1980; $\alpha = .93$), which asks youth to rate the number of times they have engaged in a variety of status offenses and violent crimes, as well as other delinquent behaviors, such as substance use. Official juvenile justice records were also used, and these records provided information about the total number of offenses youth had been charged with prior to entering the study. Each of these indices of delinquency were used as outcomes in the current study.

Data Analysis

First, we utilized crosstabs in SPSS version 23.0 in order to determine if there were gender differences in the prevalence of SA, the likelihood of meeting PTSD criteria, and the age at which SA occurred (for the subset of 382 youth who were asked to provide temporal data about their experience of SA). Comparisons were made between both sexually abused girls and sexually abused boys, and between sexually abused youth and youth without SA histories. Next, we conducted a MANOVA to examine differences in the levels of symptoms (i.e., dissociation, emotion dysregulation, and borderline personality features) youth endorsed by gender, presence of SA, and the interaction of gender and SA. Youth age, ethnicity, and non-sexual trauma exposure were entered as covariates based on past literature, suggesting that these variables are also related to posttraumatic stress, sexual abuse, and delinquency in youth (Finkelhor et al. 2014; Roberts et al. 2011; van Der Put et al. 2015).

Next, we used structural equation modelling in Mplus version 7.11 using robust maximum likelihood to test whether emotion dysregulation, borderline personality features, and dissociation statistically mediated the association between SA and negative outcomes (PTSS and delinquency). Each variable was treated as observed based on total scores (SA was treated as dichotomous), and adequacy of model fit was evaluated using a variety of fit indices, including the chi square, root mean square error of approximation (RMSEA), and comparative fit index (CFI). Direct effects were specified between SA and the three outcomes: posttraumatic stress, self-reported delinquency, and youth's legal charges. Indirect paths between SA and each outcome were specified, including emotion dysregulation, dissociation, and borderline personality features. Significant indirect effects were interpreted as being indicative of statistical mediation per established guidelines (Hayes 2013). Age, ethnicity and non-sexual trauma were entered as covariates. The correlations among posttraumatic stress and self-reported delinquency were set to zero for model identification purposes. We utilized a multi-group model to examine the patterns of results for boys and girls. Lastly, each pathway of the model was tested for moderation by gender in order to examine differences in the associations for both boys and girls.

Results

A history of SA was endorsed by approximately 20 % of the entire sample. Girls (51.0 %) were more likely to endorse a history of SA than were boys (9.2 %), $\chi^2(1) = 158.78$, $p < .001$. Based upon the subset of 382 youth who reported the age at which they had experienced SA, the majority of youth (47 %) reported experiencing SA at age 12 or older.

However, a significant gender difference emerged in that the majority of girls (57.1 %) reported experiencing SA during ages 12 and older, whereas the majority of boys (44.4 %) reported SA between the ages of birth to five, $\chi^2(1) = 4.58$, $p = .03$. Overall, sexually abused youth were more likely to meet criteria for full or partial PTSD than were non-sexually abused youth (42.8 % versus 17.8 %), $\chi^2(1) = 40.97$, $p < .001$, and this pattern was consistent when compared across gender. Additionally, sexually abused girls were more likely to meet criteria for full or partial PTSD than were non-sexually abused girls (44.7 % versus 23.2 %), $\chi^2(1) = 23.2$, $p = .01$. Similarly, sexually abused boys also were more likely to meet criteria for full or partial PTSD than were non-sexually abused boys (41.9 % versus 16.8 %), $\chi^2(1) = 21.43$, $p < .001$. Moreover, sexually abused boys and girls were equally likely to meet criteria for full or partial PTSD (41.9 % versus 44.7 %), $\chi^2(1) = .11$, $p = .75$. Correlations among variables are presented in Table 1.

Gender Differences in Symptoms

A MANOVA was conducted to examine differences in emotion dysregulation, dissociation, and borderline personality features as a function of gender and SA history. Youth age, ethnicity, and exposure to non-sexual traumas were entered as covariates. Means and standard deviations among sexually abused youth and non-sexually abused youth by gender are displayed in Table 2. Multivariate tests indicated significant main effects associated with non-sexual trauma exposure, Wilks' $\lambda(4,661) = .80$, $p < .001$, and gender, Wilks' $\lambda(4,661) = .96$, $p < .001$, but not age or ethnicity. Youth reporting non-sexual trauma exposure reported higher levels of emotion dysregulation, borderline personality features, dissociation and PTSS than youth without non-sexual trauma histories. Notably, only 27 youth in the sample did not report any trauma exposure. Overall, gender was associated with borderline personality features, emotion dysregulation, and posttraumatic stress, with girls endorsing higher levels of each than boys. No differences emerged between the levels of dissociation and delinquency (self-reported or legal charges) between boys and girls. Although the main effect of sexual abuse was non-significant, Wilks' $\lambda(4,661) = .99$, $p = .52$, sexually abused youth reported higher levels of posttraumatic stress, emotion dysregulation, borderline personality features, and dissociation than did non-sexually abused youth, $t(708-735) = -8.17$ to -4.43 , $ps < .001$. Similarly, sexually abused youth reported higher levels self-reported delinquency than non-sexually abused youth, $t(210) = -2.17$, $p = .03$; however, there were no differences in their total number of legal charges compared to non-sexually abused youth, $t(488) = 1.13$, $p = .26$.

Apart from these main effects, the interaction between SA and gender was significant, Wilks' $\lambda(4,661) = .99$, $p = .04$. In particular, when compared to non-sexually abused boys,

sexually abused boys reported higher levels of posttraumatic stress, borderline personality features, emotion dysregulation, and dissociation, $t(499-539) = -3.89-4.95$, $ps < .001$. However, sexually abused boys reported similar levels of delinquent behavior when compared to non-sexually abused boys, $t(149) = -.44$, $p = .70$, and this same pattern emerged for their total legal charges, $t(362) = -.04$, $p = .10$. There were no differences between sexually abused girls and sexually abused boys in rates of posttraumatic stress, emotion dysregulation, borderline personality features, or dissociation, $t(136-144) = -1.33$ to 1.63 , $ps > .05$. Additionally, there were no gender differences between sexually abused girls and boys on reported levels of delinquency, $t(49) = .85$, $p = .40$, or legal charges, $t(96) = -.62$, $p = .53$.

Indirect Effects between SA and PTSS, and SA and Delinquent Behaviors

Our second aim was to investigate whether there were indirect effects of emotion dysregulation, dissociation, and borderline personality features on the association between SA and the dependent variables of posttraumatic stress and delinquent behaviors, separately for self-reported delinquency and total legal charges. Youth age, ethnicity, and non-sexual trauma exposure were entered as covariates. Results including statistics for direct effects are presented in Fig. 1 for girls and Fig. 2 for boys. Results for the full sample are not presented, but are available upon request from the authors. The multi-group model was a good fit to the data, $\chi^2(6) = 8.39$, $p = .21$, CFI = .98, RMSEA = .03. For both boys and girls, direct effects emerged between SA and emotion dysregulation, and between SA and dissociation. The direct effect between SA and dissociation was significant for boys, but not for girls. For both boys and girls, there were significant direct effects between emotion dysregulation and PTSS, and dissociation and PTSS. For boys only, there was significant direct effect between borderline personality features and PTSS. For self-reported delinquency, there was a direct effect of borderline personality features for both boys and girls. There was an additional direct effect between dissociation and self-reported delinquency for girls only. Lastly, there were direct effects between borderline personality features and total legal charges for boys only. There were no significant direct effects contributing to total charges for girls. Indirect effects emerged between SA and PTSS through emotion dysregulation, $B = 1.25$, $SE = .56$, $p = .02$, borderline personality features, $B = 3.10$, $SE = .85$, $p < .001$, and dissociation, $B = 2.57$, $SE = .93$, $p = .01$, for boys only. None of the indirect effects were significant for girls, $p > .05$. Indirect effects emerged between SA and self-reported delinquency through borderline personality features for both girls, $B = 2.58$, $SE = 2.58$, $p = .04$, and boys, $B = 8.04$, $SE = 2.59$, $p = .01$. There were

Table 1 Intercorrelations separately for girls and boys and descriptive statistics for the full sample

Variable	Ethnicity	Age	SA	BP	DIS	ED	PTSS	SRD	Charges
Ethnicity		.06	.05	.09	-.01	-.02	.10	.06	-.07
Age	.03		.11	-.06	.03	-.07	.14*	.10	-.15
SA	-.04	-.01		.22**	.11	.14	.37**	.38**	-.05
BP	-.05	.09*	.19**		.49**	.68**	.48**	.33*	-.02
DIS	.05	.00	.18*	.59**		.54**	.56**	.23	.00
ED	-.02	.00	.18**	.71**	.52**		.58**	.18	-.11
PTSS	.05	.08	.21*	.63**	.58**	.56**		.29*	-.03
SRD	-.08	.03	.04	.36**	.21**	.26**	.17*		.45
Charges	.00	-.05	-.02	.11*	.05	.07	.01	-.12	
<i>M</i>	–	16.12	–	62.82	1.64	83.56	25.13	74.46	3.23
<i>SD</i>	–	1.29	–	13.67	1.64	21.10	14.04	30.51	3.96

Correlations for girls are displayed above the diagonal and correlations for boys are displayed below the diagonal in italics

SA = sexual abuse, BP = borderline personality features, ED = emotion dysregulation; DIS dissociation, PTSS = posttraumatic stress symptoms, SRD = self-reported delinquency, Charges = youths' total number of legal charges
* $p < .05$. ** $p < .01$

no significant indirect effects between SA and total prior charges for boys or girls.

Discussion

The present study filled an important gap in our understanding of the consequences of childhood SA by investigating gender differences and similarities in the associations among SA, a constellation of symptoms associated with impaired self-regulation, and both PTSS and delinquent behaviors. In contrast to previous research that has focused on all-female samples, and theoretical formulations that have viewed SA-associated sequelae, such as borderline personality as female-specific outcomes, the inclusion of a sample of sexually abused boys allowed us to directly investigate gender differences in the patterns amongst these variables. Overall, results showed that

boys and girls with histories of SA reported elevated symptoms in each of these domains, including PTSS. Finally, given that this study used a sample of high-risk adolescents involved in the juvenile justice system, the number of legal charges accrued by these different groups of youth was examined. Results indicated that, for boys only, the association between SA and PTSS was statistically mediated by borderline personality features, dissociation, and emotion dysregulation. Additionally, for both boys and girls, borderline personality features statistically mediated the association between SA and self-reported delinquency.

The first aim of the study was to examine differences between sexually abused boys and girls in order to examine whether or not a constellation of symptoms associated with girls' SA is indeed gender-specific. When comparing sexually abused boys to sexually abused girls, no differences emerged in self-reported emotion dysregulation, PTSS, borderline

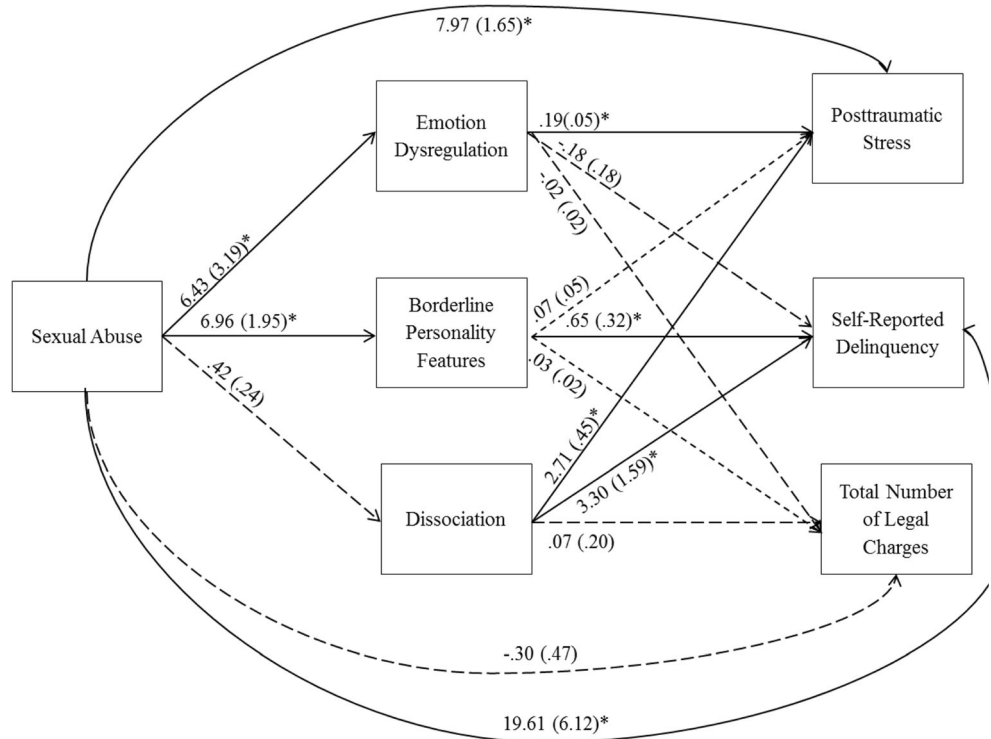
Table 2 Descriptive statistics for sexually abused and non-sexually abused girls & boys

	Sexually abused		Non-sexually abused	
	Girls M (SD)	Boys M (SD)	Girls M (SD)	Boys M (SD)
BP	72.16 (11.76) _a	68.60 (13.26) _a	66.34 (14.34) _b	59.75 (12.75) _c
DIS	2.02 (1.73) _a	2.45 (2.03) _a	1.66 (1.64) _a	1.47 (1.52) _b
ED	92.31 (20.76) _a	92.75 (22.36) _a	86.13 (23.79)	80.24 (20.14) _b
PTSS	36.00 (13.60) _a	32.06 (13.64) _a	25.09 (14.04) _b	22.21 (12.99) _c
SRD	85.61 (32.21) _a	77.56 (32.03) _a	63.57 (18.89) _b	74.11 (30.88) _b
Total charges	2.66 (2.47) _a	3.12 (2.61) _a	2.88 (2.48) _a	3.41 (4.55) _a

Scores in the same row that do not share subscripts differ significantly ($p < .05$) based on independent samples *t* tests comparing sexually abused boys and girls, non-sexually abused boys and girls, sexually abused and non-sexually abused girls, and sexually abused and non-sexually abused boys

BP = borderline personality features, DIS = dissociation, ED = emotion dysregulation, PTSS = posttraumatic stress symptoms, SRD = self-reported delinquency

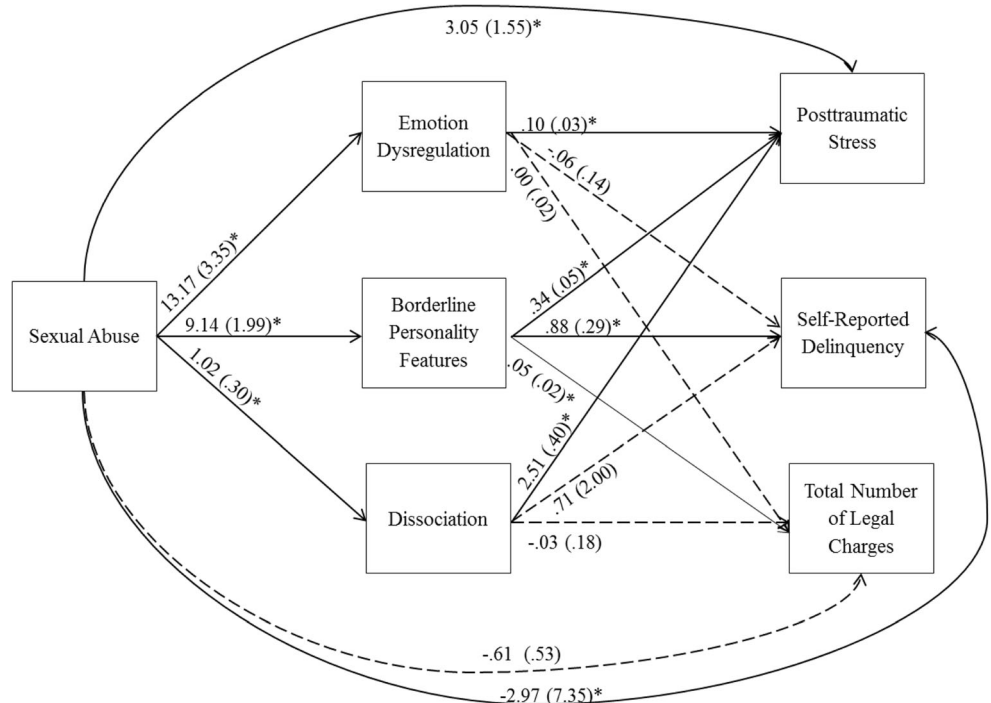
Fig. 1 Path model for girls. Unstandardized beta coefficients are presented with standard errors in *parentheses*. Significant paths are indicated by *solid lines* and non-significant paths are indicated by *dashed lines*. * $p \leq .05$



personality features, or delinquency. Thus, there appears to be congruence between the outcomes commonly seen among sexually abused girls and sexually abused boys. This is consistent with past literature showing that, in both youth and adults samples, sexually abused males and females report similar levels of PTSS (Fergusson et al. 2013; Ullman and Filipas

2005; Walker et al. 2004). However, our results are in contrast to past studies that showed sexually abused boys exhibit higher levels of dissociation (Bernier et al. 2013) and emotion dysregulation (Langevin et al. 2016) compared to sexually abused girls. We did not find gender differences in these symptoms. This may be due to these studies using samples

Fig. 2 Path model for boys. Unstandardized beta coefficients are presented with standard errors in *parentheses*. Significant paths are indicated by *solid lines* and non-significant paths are indicated by *dashed lines*. * $p \leq .05$



of preschoolers, and parent/teacher report of these symptoms. The presentation of these symptoms in sexually abused youth may be impacted by youths' developmental level, and results may differ depending on whether these symptoms are reported by youth themselves versus other informants.

It is particularly notable that sexually abused boys in this sample reported higher levels of borderline personality features than their non-sexually abused male peers, and reported borderline features equivalent to those of sexually abused girls. Borderline personality features are often associated with sexually abused women and girls (Kaehler and Freyd 2012). However, our results are consistent with one past study of justice-involved boys (Taylor et al. 2009) that found boys high in borderline personality features were more likely to have SA histories and higher levels of psychopathology compared to their peers. Furthermore, our results implicated borderline personality features in the association between SA and self-reported delinquency for boys. This finding is consistent with past work suggesting that borderline personality features may manifest as aggression and antisocial behavior for boys in adolescence rather than as disruptions in interpersonal relationships (Bradley et al. 2005). Overall, this pattern of results suggest that SA may be associated with the development of borderline personality features for both boys and girls, which may be an important intervention target for maltreated justice-involved youth.

Although a higher proportion of girls compared to boys in the current sample endorsed a history of SA, consistent with previous research on at-risk adolescent samples (Briere and Elliott 2003; Finkelhor et al. 2014; Ford et al. 2008; Kerig and Becker 2012; Kerig and Schindler 2013; Wood et al. 2002), SA was endorsed by nearly ten percent of boys in the current sample. This finding suggests the need for researchers and clinicians to acknowledge that SA occurs among boys in the justice system and, therefore, that this is a group of youth worthy of research and clinical attention regarding the negative outcomes of SA. A striking gender difference emerged related to the age of onset of SA. Among boys with a history of SA, the majority indicated that their SA experiences occurred early in life, between infancy and 5 years of age. In contrast, girls endorsing a history of SA in the current study reported that their sexual violations occurred most often during adolescence. Thus, early childhood may be a particularly vulnerable developmental period for boys to be exposed to SA, which has implications for the development of self-regulation capacities among sexually abused boys (e.g., McCoy 2013).

The results of the current study have implications not only for understanding youth with a history of SA, but also may yield insights into how youths' involvement in the juvenile justice system may be perpetuated by experiences like SA. It has been documented that PTSS increase the likelihood of recidivism among justice-involved youth (Becker et al.

2012), and in the current study, dissociation, emotion dysregulation, and borderline personality features each emerged as links between SA and posttraumatic stress for boys only. These results coincide with a growing area of research that links child maltreatment and posttraumatic stress to adolescent involvement in the justice system (Kerig and Becker 2012), and further adds specificity regarding which aspects of PTSS are implicated in this link. Additionally, the current study identified borderline personality features as key mechanism linking SA to delinquency for boys and girls. However, this pattern only emerged for youths' self-reported delinquency and not their total number of legal charges. It may be that the items endorsed on our measure of self-reported delinquency reflect maladaptive coping strategies that individuals with borderline personality features typically engage in to regulate their emotions. Furthermore, many of these behaviors, such as substance abuse and fighting, may or may not result in actual legal charges for these youth. An important area for future research may be explicating the reasons why youth engage in these delinquent behaviors.

Although this study has a number of strengths, a few limitations should be noted. First, the data were gathered cross-sectionally, which limits our ability to make causal statements about the patterns we observed. Longitudinal studies are needed to examine how SA affects youth over time on these specific symptom clusters. Secondly, other than utilizing justice system records to obtain youths' legal charges, we relied on youths' self-reports of trauma exposure and symptoms. This is especially important given low disclosure rates among victims of SA (MacMillan et al. 2003), especially boys (Easton et al. 2014). It is possible that the percentages reported by youth in this sample are an underrepresentation of the true prevalence rate of SA among these youth. Future research would benefit from including reports from caregivers and the child welfare system to verify youths' SA histories, especially for those occurring in early childhood. Collecting detailed information about youth's SA including the severity (e.g., penetration versus touching) and the nature of the youth's relationship to the perpetrator (e.g., biological parent versus peer versus romantic partner) is also an important consideration for future research. Past research suggests that the severity and proximity to the perpetrator are important to outcomes, and that gender differences emerge in these factors (Maikovitch-Fong and Jaffee 2010). Including these factors in future research may help to explain why we did not find more significant indirect effects among our sample of girls.

Future studies also need to consider the likelihood of polyvictimization and the co-occurrence of various forms of maltreatment. Research has consistently demonstrated that SA tends to co-occur with other forms of childhood maltreatment, including physical abuse and emotional abuse (van der Put et al. 2015). Polyvictimization has been associated with increased risk for adolescent negative outcomes, including

psychiatric diagnoses and involvement in delinquency (Ford et al. 2010). Among justice-involved youth in particular, polyvictimization is associated with more severe emotional and behavioral problems beyond youth with less complex trauma histories (Ford et al. 2013). Although we statistically controlled for non-sexual trauma exposure in the current study, additional studies are needed to elucidate gendered patterns in the experience of and consequences of SA in conjunction with other forms of maltreatment in childhood.

In sum, the current study was among the first to directly compare girls and boys with histories of SA on a specific pattern of symptoms, and to identify differences between boys with and without a history of SA. Additionally, this study further elucidated the associations between dissociation, emotion dysregulation, and borderline personality features in the development of posttraumatic stress following SA. The results have implications for researchers and clinicians alike, and identify the need for further work focusing on boys with SA in particular. To date, the majority of research on SA has focused only on girls, and has assumed equivalent outcomes for boys. The current study indicates that boys and girls with a history of SA are more similar than different in terms of psychological outcomes. However, there were some differences that emerged, such as boys reported an earlier age of onset for their sexual trauma, and unique patterns for boys as compared to girls in terms of the mechanisms linking SA to posttraumatic stress. Overall, these results demonstrate that SA is pernicious for boys as well as girls, and highlight a number of future directions to further advance our understanding of boys and girls exposed to SA.

Compliance with Ethical Standards All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

Conflict of Interest All authors declare that they have no competing interests.

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