

# Exploring the Link Between Child Sexual Abuse and Sexually Intrusive Behaviors: The Moderating Role of Caregiver Discipline Strategy

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**Abstract** Although it has been well documented that children who experience child sexual abuse (CSA) are at increased risk for developing sexually intrusive behaviors (SIB), there is considerable heterogeneity in symptom presentation. With the aim of elucidating potential moderating factors that both exacerbate and attenuate outcomes following CSA, the current study investigated caregiver discipline strategy as one potential factor that may moderate the relationship between CSA and SIB. Participants included 986 eight-year-old children (51.4 % female) drawn from the Longitudinal Studies of Child Abuse and Neglect consortium. Child maltreatment histories were collected every 2 years starting at age 4, and caregiver discipline strategies and SIB were assessed at age 8. Results confirm the lack of a simple pathway between CSA and SIB and indicate that caregiver discipline strategy may represent a unique moderator for both exacerbating and attenuating risk for SIB following CSA. Specifically, for girls with a history of CSA, caregiver use of adaptive discipline resulted in lower levels of SIB, whereas caregiver use of physical discipline resulted in higher levels of SIB. The present study contributes to the ongoing discourse regarding the treatment of children who have experienced CSA and etiological pathways associated with the development of SIB.

**Keywords** Child sexual abuse · Child sexual behavior problems · Parenting · Discipline · Child maltreatment

## Introduction

It has been well-documented that children who have experienced sexual abuse are at risk for maladaptive outcomes, including the display of developmentally inappropriate, intrusive, and sometimes aggressive sexual behaviors (Kendall-Tackett et al. 1993; Putnam 2003). However, there also appears to be considerable heterogeneity in symptom presentation, as many children do not exhibit problematic sexualized behaviors following sexual abuse. To better understand this diversity in outcome, research on the developmental consequences of child sexual abuse (CSA) has recently shifted from studying what goes wrong toward an examination of the context in which the development of psychopathology (Cicchetti and Toth 1995), including problematic sexualized behaviors, takes place. Further, researchers have also given increased attention to the identification of moderators that protect against or attenuate maladaptive development, despite the presence of risk. Understanding both risk and protective factors for the development of sexually intrusive behaviors (SIB) is critical for identifying types of children who may benefit from different kinds of help and intervention (Achenbach 1978) and for targeting problem-specific prevention programs (Weisz and Weersing 1999). Consistent with this changing focus, the current study investigates caregiver discipline strategy as a moderator of the relationship between CSA and subsequent SIB.

Over the last decade, descriptive and empirical work on child sexualized behaviors has increased (for a comprehensive review, see Elkovitch et al. 2009). Overall, this

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work indicates that although the display of a broad range of sexual behaviors in childhood is both expected and developmentally appropriate (Friedrich 1998), not all sexual behaviors are normative. Specifically, problematic child sexual behaviors have been defined as behaviors initiated by children age 12 and under that involve sexual body parts (e.g., genitals, anus, breasts) that are developmentally inappropriate and/or potentially harmful to the child or children involved (Chaffin et al. 2008). Typically, behaviors labeled as problematic include behaviors that are sexually intrusive, aggressive, or more imitative of adult sexual behavior, such as attempted intercourse, oral-genital contact, and inserting objects into the vagina/rectum (Friedrich et al. 1991; Friedrich 1998; Schoentjes and Deboutte 1999).

Research consistently demonstrates that, across genders and ages, children who have been sexually abused engage in a higher frequency of SIB than non-abused children from clinical or community settings (Kendall-Tackett et al. 1993; Putnam 2003). Nonetheless, it is clear that not all children who have experienced CSA will go on to exhibit SIB, nor do all children displaying SIB have a history of CSA (Elkovitch et al. 2009). Thus, consistent with a developmental psychopathology perspective, it appears that although CSA is a general risk factor for SIB, specific contextual characteristics likely render some children more or less susceptible to its effects. The family environment, and parenting practices in particular, may represent one important contextual factor helping to explain the variability in the effects of CSA on outcomes (Briere and Elliott 1993; Bukowski 1992; Kendall-Tackett et al. 1993).

Broadly defined, parenting practices have been consistently linked with children's developmental outcomes and well-being (Collins et al. 2000). Social learning (e.g., Bandura 1973) and social interactional theories (e.g., Patterson 1982) suggest that negative exchanges within the parent-child relationship eventually lead to the teaching, socialization, and acquisition of disruptive behaviors. Conversely, parents who employ positive parenting practices facilitate the development of emotion regulation skills (Cummings and Davies 1996) and prosocial behaviors (Patterson 1982), and thus have the potential to reduce the likelihood of maladaptive behaviors. Within this framework, caregiver discipline practices have emerged as one of the most important parenting practices when considering child behavior problems (Baumrind 1997; Chamberlain and Patterson 1995). Harsh and punitive discipline practices, here defined as using physical force (e.g., smacking) or psychological aggression (e.g., belittling) in response to misbehavior, have been linked, both concurrently and over time, to a number of negative developmental outcomes including subsequent aggression (e.g., Gershoff 2002), internalizing problems (e.g., Kim et al. 2003), and

interpersonal problems (e.g., Vissing et al. 1991). These associations may vary by gender, however. For example, the positive association between harsh discipline and externalizing behavior has repeatedly been shown to be stronger for boys than for girls (Gordis et al. 2001).

On the other hand, research indicates that nonviolent discipline and appropriate management of misbehavior (e.g., clear instructions, limit setting) is associated with fewer child behavior problems (Kotchick and Forehand 2002). Furthermore, appropriate discipline has been shown to buffer children against the effects of preexisting vulnerabilities, such as a difficult temperament (Murry and Brody 1999), as well as a variety of stressful and negative events, such as parental divorce (Wolchik et al. 2000). In fact, positive parenting and discipline techniques have been shown to promote greater self-regulation than factors in both the individual child and community domains (Murry and Brody 1999).

Surprisingly, to date, no studies have examined the contextual influence of discipline strategies on the association between CSA and SIB, despite evidence that aspects of the family environment, including parenting practices, play a crucial role in child adjustment following CSA. Specifically, research indicates that sexually abused children exhibit greater levels of behavioral and emotional symptoms when their families have characteristics of negative family functioning (e.g., poor problem-solving, low cohesion; Faust et al. 1995; Cohen and Mannarino 1996). Furthermore, longitudinal investigations of outcomes following CSA have found that one of the best predictors of child adjustment, broadly defined, is the response of the child's non-offending caregiver(s) following sexual abuse disclosure (Cohen and Mannarino 2000; Everson et al. 1991). Low levels of support from a non-offending caregiver following CSA have been shown to be associated with both child internalizing (e.g., Adams and Bukowski 2007) and externalizing problems (e.g., Tremblay et al. 1999), including sexualized behaviors more specifically (Everson et al. 1991; Hall et al. 2002).

Not only do characteristics of poor parenting predict the development of SIB among children who have been sexually abused, but effective parenting has been shown to buffer against the development of SIB for these children. For example, Hall et al. (2002) found that sexually abused children who *failed* to demonstrate problematic sexualized behaviors were significantly more likely than their counterparts exhibiting SIB to come from a more functional family (marked by stability, support, problem-solving, etc.) with more functional caregivers, and have a stronger parent-child relationship. This work, in combination with the broader literature highlighting the impact of caregiver discipline strategies, lends support to the hypothesis that discipline strategies likely play an important moderating

role in the CSA-SIB relationship, and that this association may vary by gender.

The overarching aim of the present study was to examine the association between CSA and SIB and whether this association varied based on caregiver discipline strategy. Given previous findings in samples of children identified as having histories of CSA (e.g., Friedrich et al. 2001) and samples of children referred for SIB (e.g., Bonner et al. 1999; Gray et al. 1997), we hypothesized that CSA would predict SIB. Additionally, drawing from work highlighting the importance of the non-offending parent-child relationship following disclosure of CSA (e.g., Everson et al. 1991; Hall et al. 2002) and the broader literature documenting the impact of both harsh and adaptive discipline on child development (e.g., Wolchik et al. 2000), we hypothesized that the association between CSA and SIB would be moderated by caregiver discipline strategy. Specifically, we expected that sexually abused children with caregivers who reported utilizing higher levels of psychological aggression and/or physical aggression would demonstrate higher levels of SIB than sexually abused children with caregivers utilizing lower levels of these harsh discipline strategies. On the other hand, we hypothesized that higher levels of adaptive discipline would buffer against the development of SIB following CSA.

Further, based on evidence that boys experience greater exposure to harsh discipline and are more likely to evidence negative psychosocial outcomes following exposure (e.g., Gershoff 2002), we hypothesized that boys with histories of CSA would be more negatively affected by both forms of harsh discipline than would be girls. As the extant literature does not include investigations of gender differences in associations between adaptive discipline and outcomes of interest, no a priori hypotheses were made with regard to how the relationship between CSA, adaptive discipline, and SIB may vary by gender.

## Method

### Participants

### Procedures

The present study uses data collected from the caregivers of children participating in the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN; Runyan et al. 1998) consortium, supplemented with maltreatment data from state child protective services (CPS) central registries and local CPS agencies. The LONGSCAN consortium consists of five study sites across the United States; at three sites, children and their families were recruited to participate if

they had a prior referral to CPS, and at two sites, participants were recruited based on the child's status as "at risk" for child maltreatment. At each site, children and their primary caregivers were interviewed in person every 2 years beginning when the children were approximately 4 years old. Further, data on maltreatment were collected from CPS record reviews at least every 2 years. For additional information regarding recruitment and procedures at each of the five sites, see Runyan et al. 1998. The LONGSCAN data used in the present study were obtained from the National Data Archive on Child Abuse and Neglect (NDACAN) and are used with Archive permission.

### Sample Demographics

Participants for the current study were drawn from the 1,354 children that comprise the five sites of the LONGSCAN consortium. Participants were excluded if they were missing data on gender and/or were not interviewed at the age 8 time point (the time at which SIB and discipline were assessed). The sample for the current study, therefore, included 986 children. This subsample did not differ on basic demographic characteristics (gender, race, income) from the larger sample of children in LONGSCAN, and was 51.4 % female, 58.3 % Black, 24.8 % White, 4.3 % Hispanic, 11.0 % racially mixed and 1.7 % were identified as another race. Caregivers in the current sample were 95.7 % female (82.2 % biological, step-, foster, or adoptive mothers), and had a mean age of 35.6 years (range: 18 to 80 years, SD = 9.8). Overall, this multi-site sample represents a diverse ethnic and sociodemographic population of children and caregivers.

### Measures

#### Demographic Information

Standard demographic information was collected from caregivers; of particular interest in the current study are child gender and socioeconomic status. An indicator of socioeconomic status, family income, was included as a potential covariate because it has been found to be related to caregiver discipline practices and girls' sexual behavior problems, broadly defined (Friedrich et al. 1992). Eleven categories of family income were examined, ranging from less than \$5,000 per year to more than \$50,000 per year.

Consistent with prior research with the LONGSCAN dataset (e.g., Black et al. 2009; Merrick et al. 2008), site was included as a covariate in all analyses as a dichotomized variable on the basis of recruitment criteria: children identified as at-risk for child maltreatment and children with a CPS documented history of maltreatment.

### *Child Sexual Abuse*

Child sexual abuse was measured using two sources of information. First, the Modified Maltreatment Classification System (MMCS; English and the LONGSCAN Investigators 1997; as modified from the Maltreatment Classification System outlined in: Barnett et al. 1993) was utilized to code official CPS records. Reports made to CPS in the form of narrative accounts for suspected CSA from birth to 8 years of age were reviewed, abstracted, and coded from county level files. All reports, whether substantiated or not, were coded as representing CSA. Despite the possibility of false-positive cases, there is strong evidence that many unsubstantiated reports do involve maltreatment (e.g., Drake 1996) and that there are few differences in the behavior and development of children with substantiated and unsubstantiated reports (Drake 1996; Hussey et al. 2005). The MMCS has been used extensively in coding maltreatment data across studies and is accepted as a reliable classification of maltreatment experiences based on CPS records (Hunter et al. 2003).

Second, CSA was assessed via caregiver report. At the age 8 interviews, caregivers were asked three questions to assess caregiver-reported suspected/reported CSA: one item asked about suspected sexual abuse and two items asked about reported sexual abuse (Hunter et al. 2003). If a report had been made to CPS for sexual abuse and/or if a caregiver endorsed any of these three items, a child was coded as having a history of sexual abuse. To the extent our definition of CSA—CPS-reported and/or caregiver-reported—might introduce cases where no CSA has actually occurred, the use of this index should provide a conservative estimate of the influence of CSA on SIB.

### *Child Physical Abuse, Emotional Abuse, and Neglect*

Extant research indicates that other forms of child maltreatment (beyond CSA) represent significant etiological mechanisms associated with the development of problematic sexual behaviors (Merrick et al. 2008; Silovsky and Niec 2002). Given this consistent finding, broader forms of maltreatment—physical abuse, emotional abuse, and neglect—were included as potential covariates. These forms of maltreatment were also measured via the MMCS (English and the LONGSCAN Investigators 1997) and data extraction and coding procedures parallel those described above.

### *Discipline Strategies*

Disciplinary practices were assessed at the age 8 interview using the Discipline Methods Assessment (DMA; Socolar et al. 1999). The DMA is a structured interview during which trained interviewers ask caregivers how they

typically respond to each of the following child misbehaviors: disobedience, disrespect, hitting a smaller or younger child, lying, and stealing. After describing her typical first response to each of these misbehaviors, the caregiver is then asked what she does if the first response does not work. If the caregiver reports that the child never performs one of the described misbehaviors, or she states that the primary strategy is never ineffective, she is asked, “What would you do if this occurred?” Responses were recorded verbatim and then coded by the interviewer into categories reflecting different disciplinary strategies including various forms of adaptive discipline (e.g., empathizing with the child, limit setting, verbal assertion/teaching), nonphysical psychological discipline (e.g., verbal/symbolic aggression, embarrassment, severe social isolation, terrorizing), and physical punishment (e.g., hitting, physical restraint). Scoring criteria and interviewer training used in the present study parallel that used by Socolar et al. (1999). Interviewers in the consortium were trained to better than 90 % agreement on scoring responses. A second trained staff member reviewed each caregiver response and independently assigned a code to ensure interrater reliability (greater than 95 %). In those few cases where a disagreement occurred, a third staff member reviewed the caregiver response and determined the code.

Consistent with methodology used by De Robertis and Litrownik (2004), in the current study each caregiver was assigned a score for each domain based on a sum of their primary and secondary discipline responses that were coded as adaptive, nonphysical psychological, or physical punishment.

### *Sexually Intrusive Behavior*

A LONGSCAN-modified version of the Child Sexual Behavior Inventory-II (CSBI-II; Friedrich 1997) was used at the age 8 interview to assess the frequency of a child’s display of sexually intrusive behaviors in the past 6 months. The frequency of behaviors observed by caregivers are indicated on a 4-point Likert-type scale ranging from 0 (*never*) to 3 (*at least once a week*). The scale of interest in the present study, Sexual Intrusiveness, contains seven items (e.g., *Tries to undress others against their will, Asks others to engage in sexual acts, Touches other people’s private parts*). This measure was administered at the age 8 face-to-face interview. In the current sample, the Sexual Intrusiveness scale demonstrated adequate internal consistency (Cronbach’s  $\alpha = .70$ ).

### *Exposure to Sexual Activity and Sexually Explicit Media*

Child sexual behavior problems, broadly defined, have been consistently associated with early, age-inappropriate

exposure to sexual behavior or knowledge (Bonner et al. 1999; Friedrich et al. 1991, 1992, 2003). Given this consistent finding, exposure to sexual activity/sexually explicit media was included as potential covariate. At the age 8 interview, the child's primary caregiver reported on two questions related to exposure to sexual activity (e.g., "Has s/he ever seen people having sex in real life?") and two questions related to sexually explicit media (e.g., "Has s/he seen adult magazines like Playboy, Penthouse or Hustler?"; Hunter et al. 2003). In the current study, the four items were summed to create a count variable, Exposure to Sex, indicating the number of different sexual activities and sexually explicit materials to which each child has been exposed.

### Data Analysis

First, to guide our decision of which variables to include as covariates in our models, zero-order correlations were examined between sexualized behavior and potential confounds. Second, bivariate associations between child sexual abuse and discipline practices were then examined. Finally, hierarchical multiple regression was used to examine our primary aim of testing the association between CSA and SIB and whether this association varied based on caregiver discipline strategy. Analyses were conducted separately for boys and girls to illuminate possible gender differences regarding the development of sexualized behaviors (for examples of this approach with regard to the development of child externalizing behaviors, see Hill et al. 2006; Keenan and Shaw 1997). To keep the number of model predictors to a minimum, interaction terms were entered in the final step of the model separately resulting in a series of three hierarchical linear regressions for each gender with the following steps: (1) Step 1—recruitment site (dummy coded) and other key covariates; (2) Step 2—CSA; (3) Step 3—caregiver discipline strategy; and (4) Step 4—the interaction term between CSA and caregiver discipline strategy. This order of entry was used for each of the three discipline strategies. The predictors were mean centered in order to reduce possible multicollinearity between the independent variables and the interaction term, and to facilitate the interpretation of the interaction effect (Cohen et al. 2003).

## Results

### Relations Between Potential Covariates and Sexually Intrusive Behavior

To examine associations between dichotomous potential covariates (physical abuse, emotional abuse, and neglect)

and SIB, one-way ANOVAs were performed. None of these potential covariates emerged as significantly associated with SIB (for both genders, all  $F_s < 2.70$ , all  $p_s > .05$ ) and, as such, were not included in subsequent multivariate analyses. To examine associations between the continuous and ordinal potential covariates, family income, Exposure to Sex, and SIB, bivariate Pearson correlations were performed. Family income was not significantly related to SIB for either gender ( $p_s > .05$ ). However, Exposure to Sex evidenced a significant bivariate association with SIB for both genders (boys:  $r = .16$ ,  $p < .001$ ; girls:  $r = .11$ ,  $p < .01$ ) and was therefore included as a covariate in subsequent multivariate analyses.

### Relations among Child Sexual Abuse, Discipline Practices and Sexually Intrusive Behaviors

Descriptive statistics and associations among CSA, discipline strategies, and SIB for boys and girls are presented separately in Tables 1 and 2, respectively. In the current sample, 12.3 % ( $n = 59$ ) of the boys and 24.3 % ( $n = 129$ ) of the girls had experienced CSA. SIB was significantly associated with CSA for both girls and boys. However, although both Adaptive Discipline (positively) and Physical Discipline (negatively) were associated with CSA for girls, CSA did not evidence a significant association with any of the discipline strategies for boys. SIB was not associated with any of the discipline strategies for either group. Furthermore, as expected, discipline strategies were all significantly related to one another in both groups, although the association between Psychological Discipline and Physical Discipline was small. Finally, boys and girls were reported to display similar mean levels of SIB ( $t = 1.68$ , Cohen's  $d = 0.11$ ).

### Predicting Sexually Intrusive Behavior from Child Sexual Abuse and Discipline Strategies

A series of hierarchical multiple regressions were performed to test associations between CSA, caregiver discipline strategy, and SIB. As noted above, only site and Exposure to Sex were included as covariates in these analyses. As shown in Table 3, for boys, only Exposure to Sex emerged as a significant predictor of SIB ( $\beta = .16$ ,  $t = 3.46$ ,  $p < .001$ ). Surprisingly, after controlling for site and Exposure to Sex, CSA was not significantly associated with SIB. Furthermore, none of the discipline strategies were uniquely associated with SIB and none of the interactions between CSA and the discipline strategies were significant.

Consistent with findings among boys, Exposure to Sex predicted SIB in step 1 for girls ( $\beta = .11$ ,  $t = 2.49$ ,  $p < .05$ ; see Table 4). Furthermore, although CSA

**Table 1** Interrelations among child sexual abuse, discipline practices, and sexually intrusive behaviors: boys

	Child sexual abuse	Adaptive discipline	Psychological discipline	Physical discipline	Sexual intrusiveness
Child sexual abuse					
Adaptive discipline	.08				
Psychological discipline	.08	-.43***			
Physical discipline	-.06	-.55***	.17***		
Sexual intrusiveness	.10*	-.01	-.00	-.08	
Mean/percentage	12.3 %	7.02	.61	.80	.19
Standard deviation/N	59	2.24	1.12	1.10	.87

N = 479

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ **Table 2** Interrelations among child sexual abuse, discipline practices, and sexually intrusive behaviors: girls

	Child sexual abuse	Adaptive discipline	Psychological discipline	Physical discipline	Sexual intrusiveness
Child sexual abuse					
Adaptive discipline	.14**				
Psychological discipline	.03	-.45***			
Physical discipline	-.15***	-.57***	.15***		
Sexual intrusiveness	.15***	.03	-.02	-.01	
Mean/Percentage	24.3 %	7.27	.53	.74	.11
Standard deviation/N	123	2.12	.96	1.03	.60

N = 507

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ **Table 3** Predicting sexually intrusive behaviors from child sexual abuse and discipline strategies: boys

	$\beta$	$t$	$\Delta R^2$	F value for step
<i>Step 1: Covariates</i>				
Site (1 = CPS)	.02	.40	.03	F(2,473) = 6.20**
Exposure to sex	.16	3.46***		
<i>Step 2: CSA</i>				
Child sexual abuse	.09	1.92	.01	F(1,472) = 3.69
<i>Step 3: Discipline strategies</i>				
Adaptive discipline	-.12	-1.90	.01	F(3,469) = 2.12
Psychological discipline	-.07	-1.26		
Physical discipline	-.08	-1.31		
<i>Step 4: Interaction Terms</i>				
4a. CSA $\times$ adaptive	.07	1.44	.00	F(1,467) = 2.09
4b. CSA $\times$ psychological	.00	.01	.00	F(1,467) = .00
4c. CSA $\times$ physical	-.08	-1.72	.01	F(1,467) = 2.95

N = 479

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ 

uniquely predicted SIB ( $\beta = .14$ ,  $t = 3.21$ ,  $p < .01$ ) after controlling for site and Exposure to Sex, none of the discipline strategies emerged as unique predictors of SIB in step 3. Caregiver discipline strategy did, however,

significantly moderate the association between CSA and SIB. Specifically, both Adaptive Discipline ( $\beta = -.13$ ,  $t = -2.43$ ,  $p < .05$ ) and Physical Discipline ( $\beta = .14$ ,  $t = 2.78$ ,  $p < .01$ ) moderated the association between CSA and SIB. To examine the specific form of these interactions, slopes of the final equations were computed at points that corresponded to high and low levels of the predictor variables ( $\pm 1.0$  SD; see Aiken and West 1991). As shown in Fig. 1, Adaptive Discipline was negatively associated with SIB for girls who were sexually abused but largely unrelated to SIB for those girls who had not been abused. Furthermore, as shown in Fig. 2, Physical Discipline was positively associated with SIB for girls who had been sexually abused but was unrelated to SIB for girls who had not been sexually abused. In other words, for both Adaptive and Physical Discipline strategies, results revealed associations with SIB only for those girls who had experienced CSA.

## Discussion

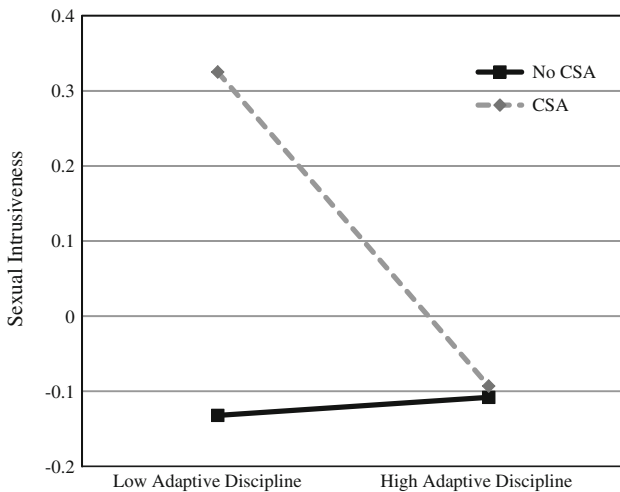
The current investigation is the first to examine the moderating role of discipline strategies on the association

**Table 4** Predicting sexually intrusive behaviors from child sexual abuse and discipline strategies: girls

	$\beta$	$t$	$\Delta R^2$	F value for step
<i>Step 1: Covariates</i>				
Site (1 = CPS)	.04	.87		
Exposure to sex	.11	2.49*		
<i>Step 2: CSA</i>				
Child sexual abuse	.14	3.21**	.02	F(1,502) = 10.32***
<i>Step 3: Discipline strategies</i>				
			.01	F(3,499) = .21
Adaptive discipline	-.00	-.07		
Psychological discipline	-.03	-.61		
Physical discipline	.02	.42		
<i>Step 4: Interaction terms</i>				
4a. CSA $\times$ adaptive	-.13	-2.43*	.02	F(1,498) = 5.90*
4b. CSA $\times$ psychological	-.03	-.56	.00	F(1,498) = .32
4c. CSA $\times$ physical	.14	2.78**	.02	F(1,498) = 7.75**

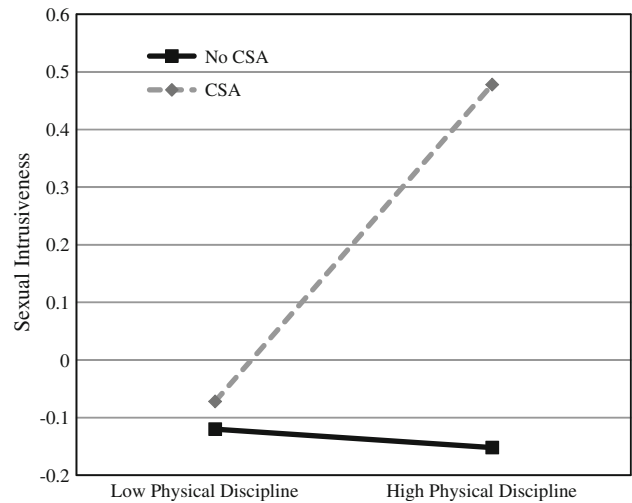
N = 507

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$



**Fig. 1** Adaptive Discipline moderates the relationship between CSA and SIB: Girls. High and low values correspond to +1.0 and -1.0 SD from the mean, respectively. Sexual Intrusiveness scores are standardized,  $M = 0$ ,  $SD = 1$

between CSA and subsequent SIB. The results of the current study are an important contribution to the extant literature, particularly given the advantages of a developmental-ecological approach to examining risk and protection with a large, diverse sample of maltreated and at-risk children. Results confirm the lack of a simple pathway between CSA and SIB, and indicate that caregiver disciplinary practices may represent a unique moderator for both exacerbating and attenuating risk for SIB following CSA, at least among girls.



**Fig. 2** Physical Discipline moderates the relationship between CSA and SIB: Girls. High and low values correspond to +1.0 and -1.0 SD from the mean, respectively. Sexual Intrusiveness scores are standardized,  $M = 0$ ,  $SD = 1$

Consistent with prior work (Friedrich 1998; Friedrich et al. 1991, 2000; Merrick et al. 2008; Schoentjes and Deboutte 1999), boys and girls were reported to engage in similar rates of SIB, at least when overall scale scores were compared. It is important to highlight this in contrast to the adolescent literature, which suggests that male gender is a robust risk factor for sexual behavior and offending (Worling and Curwen 2000). The relative absence of gender effects indicates that SIB in children must not be considered as parallel to intrusive sexual behavior in adolescents or adults.

As noted earlier, research consistently demonstrates that children who have been sexually abused engage in a higher frequency of SIB than non-abused children from clinical or community settings (Kendall-Tackett et al. 1993; Putnam 2003). Consistent with this work, bivariate analyses in our sample indicated that for both boys and girls, CSA prior to age 8 was significantly (albeit relatively small in magnitude) positively related to SIB at age 8. Results of regression analyses revealed, however, that only for girls did CSA emerge as a significant unique predictor of SIB after controlling for site and Exposure to Sex. These results are surprising given the historical emphasis, both theoretical and empirical, on sexual abuse as the principal cause of sexualized behaviors in childhood (e.g., Friedrich 1993; Kendall-Tackett et al. 1993). There are several potential explanations for these findings. First, compared to our use of a heterogeneous, at-risk sample, the majority of the extant literature focuses on extreme groups: children referred for treatment for sexual abuse (e.g., Hall et al. 2002) and/or for high levels of sexual behavior problems (e.g., Bonner et al. 1999). Sexual abuse histories may be more common in children in one of these two extreme

groups. Second, it may be that the effects of exposure to sexual activity and sexually explicit media account for the entirety of the variance that would otherwise be explained by CSA, at least for boys; it will be important for future work to more thoroughly examine the nature of this contribution to the development of SIB. Finally, as will be discussed in detail below, the heterogeneity with regard to the nature of CSA (e.g., age of onset, frequency) may be another potential explanation for the relatively weak association between CSA and SIB.

Drawing from the literature highlighting the importance of the non-offending parent–child relationship following CSA and the impact of caregiver discipline strategies on both adaptive and maladaptive outcomes, we hypothesized that discipline strategies would moderate the association between CSA and subsequent SIB. Results provided partial support for our hypotheses. Contrary to expectations, discipline strategy did not moderate the association between CSA and SIB for boys. For girls, however, both adaptive discipline and physical discipline moderated the association between CSA and SIB. Specifically, for girls with a history of CSA, caregiver use of adaptive discipline was found to result in lower levels of SIB, whereas caregiver use physical discipline was found to result in higher levels of SIB. It is important to note that our models explained up to 3 % of the variance in SIB. Whereas these effects are not very large, understanding even a small proportion of the variance in sexualized behavior has public health relevance and can guide the development of more effective prevention and intervention efforts (Prentice and Miller 1992).

Consistent with a developmental psychopathology approach, these findings provide support for the importance of parenting practices in understanding multifinality (Cicchetti and Rogosch 1996)—diverse outcomes following a single source of influence—after CSA. It is possible that consistent structure or expectations may affect girls' response to CSA by promoting an increased sense of predictability, which may facilitate the development of regulation skills and adaptive coping efforts. On the other hand, more negative parent–child interactions, likely characterized within psychological discipline strategies, may place increased strain on girls' coping capacities and in the context of CSA, lead to higher levels of SIB. Further, the current findings highlight the importance of considering the reciprocal relations among parenting practices, parental characteristics, and their children's characteristics (Latzman et al. 2009). Overall, these findings highlight the importance of providing non-offending caregivers with adequate parent management training and ongoing support to maximize their ability to influence their child's behavioral development in a positive manner. Similarly, caregivers may benefit from more individual-focused support and treatment, given the consistent link between high

levels of parental distress and both use of maladaptive discipline (e.g., Pinderhughes et al. 2000) and child externalizing behaviors and posttraumatic stress symptomatology following CSA (e.g., Everson et al. 1991).

Although the lack of findings for discipline strategy as a moderator for boys is surprising, there are a number of potential explanations. The same-gender similarity of caregivers and children may represent one possible explanation. Research suggests that the impact of parental psychopathology varies by not only the gender of the child, but also the gender of the parent (Cummings et al. 2005; Ramchandani et al. 2005). For example, Cummings et al. (2005) found that paternal depressive symptoms had a stronger negative relationship with prosocial behavior outcomes of boys, whereas maternal symptoms had a stronger relationship with poor peer relationship outcomes of girls. As almost all (over 95 %) of the caregivers in our sample were female, we were not able to examine the effects of caregiver gender in the current sample. Future work should, however, consider both the child and parent gender when examining the impact of caregiver variables in outcomes following CSA. Another potential explanation for this finding is the relatively low number of boys (versus girls) in our sample that had been sexually abused, resulting in insufficient power to detect this association in our multivariate analyses. Nonetheless, though, the rate of CSA among boys in our sample is not appreciably different than that reported in previous studies (e.g., Pereda et al. 2009).

#### Strengths and Limitations

The implications of the present study are bolstered by the use of an ecological approach to examine risk and protection prospectively within a relatively large, diverse sample of maltreated and at-risk children. Although examinations of children referred for treatment following sexual abuse and/or for a high level of sexualized behavior contribute to our understanding of group-level differences, examinations with more diverse samples allow for a more comprehensive understanding of risk and outcome across different levels of severity. Further, although researchers have tended to study children exhibiting sexualized behaviors in broad age ranges such that two or more distinct developmental stages are included (e.g., Letourneau et al. 2004) thereby confounding developmentally relevant information, the present study examined a specific age group: 8-year-old boys and girls. Finally, we examined SIB dimensionally. To date, most studies examining problematic sexual behaviors have used clinical cut-off scores to classify children into two groups: those that exhibit sexual behavior problems, versus those that do not (e.g., Bonner et al. 1999), or have dichotomized CSBI domain scores to create two groups:



children with at least one report of sexualized behavior, versus no reports of sexualized behavior (e.g., Merrick et al. 2008). Examining sexual behavior dimensionally allows for an examination of the degree to which SIB is exhibited and is consistent with the large body of research supporting the conclusion that problem behaviors are best understood as continuous in nature (Krueger and Markon 2006).

Nonetheless, a number of limitations suggest caution about the study's conclusions. First, participants were drawn from a sample of children at elevated risk for or exposed to maltreatment. Therefore, the findings are best generalized to these populations of children. Second, information on SIB was available only at the age 8 interview. It is possible that some children began displaying problematic sexual behaviors prior to exposure to risk (in this case, CSA and discipline strategies), increasing potential variability in the temporal connectedness of these factors. Therefore, it will be important for future work to assess sexualized behavior at multiple time points as well as consider the time elapsed between risk factor exposure and measurement of sexual behavior. Third, because no "gold standard" exists when measuring problematic youth behaviors (De Los Reyes and Kazdin 2005), it is important that subsequent investigations use multiple informants. Use of self-, teacher- and caregiver-report of SIB would allow for a more comprehensive assessment of SIB. Similarly, future work should also consider using observational methods to measure discipline, given the possibility of socially desirable responding on the DMA.

Finally, it is possible that relations between CSA, discipline practices and sexualized behaviors may have been masked by a heterogeneous age of onset, frequency, duration and severity of CSA. For example, some research indicates that reports of emotional abuse between the ages of 4 and 8 are predictive of certain types of sexualized behaviors, whereas earlier reports (prior to age 4) are not (Merrick et al. 2008). Therefore, it is important that future work consider the developmental period in which the child is initially exposed to the risk factor, such as CSA. In other words, researchers must be sensitive to the normative maturational tasks that the child is attempting to master at the time of exposure to the risk factor (for a discussion, see Manly 2005). Furthermore, our definition of CSA may have influenced findings. In our study, children were coded as having a history of CSA if they had CPS history of reported CSA and/or a caregiver reported a history of CSA (which may or may not have been reported to CPS). It is possible that this definition may introduce cases where no CSA has actually occurred; however, as noted previously, the use of this index should provide a conservative estimate of the influence of CSA on SIB.

## Conclusions

Limitations notwithstanding, the current study contributes to the larger literature on developmental consequences of CSA, as well as the smaller literature on the development of SIB in childhood (see, e.g., Elkovitch et al. 2009). Consistent with a developmental psychopathology perspective, it appears that although CSA does represent a general risk factor for SIB, specific contextual characteristics likely render some children more or less vulnerable to its effects. Specifically, in the current investigation, we found caregiver use of physical and adaptive discipline to be one such contextual factor that resulted in either increased (physical discipline) or decreased (adaptive discipline) risk for SIB following CSA, at least for girls. Taken together, results of the current study confirm the importance for future prospective work to consider caregiver discipline practices, in addition to broader contextual variables that are amenable to therapeutic intervention, when examining both outcome following CSA and the etiology of SIB. Such investigations will be greatly informative not only for researchers interested in these behaviors, but also for practitioners charged with developing and implementing evidence-based prevention and intervention efforts aimed at addressing SIB in childhood.

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