

Role of Body Esteem in the Sexual Excitation and Inhibition Responses of Women With and Without a History of Childhood Sexual Abuse



Chelsea D. Kilimnik, MSc, and Cindy M. Meston, PhD

ABSTRACT

Introduction: Women's sexuality is influenced by their perceptions of their bodies. Negative body appraisals have been implicated in the development and maintenance of sexual concerns in women with a history of childhood sexual abuse (CSA). The sexuality of these women is often expressed in extremes of approach and avoidant sexual tendencies, which have been related to the sexual inhibition and sexual excitation pathways of the dual control model.

Aim: To test the influence of body esteem on the sexual excitation and inhibition responses of women with and without a history of CSA.

Methods: One hundred thirty-nine women with CSA and 83 non-abused women reported on their abuse history, depressive symptomology, sexual response, and affective appraisals of their body.

Main Outcome Measures: Validated self-report measurements of sexual excitation and inhibition responses (Sexual Excitation/Sexual Inhibition Inventory for Women) and body esteem (Body Esteem Scale) were administered.

Results: Body esteem was significantly associated with sexual inhibition responses of women regardless of CSA history status but was significantly related only to the sexual excitation responses of women with a CSA history. Perceived sexual attractiveness was a unique predictor of sexual excitation in women with a history of CSA.

Conclusion: Women with a history of CSA have lower body esteem than non-abused women, particularly in self-perceived sexual attractiveness, and these perceptions appear to influence their sexual responses by acting on the sexual excitation and inhibition response pathways.

J Sex Med 2016;13:1718–1728. Copyright © 2016, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

Key Words: Childhood Sexual Abuse; Body Esteem; Sexual Response; Sexual Excitation; Sexual Inhibition

INTRODUCTION

Women's sexuality is influenced by how they perceive their bodies.¹ Body image and one's body-related esteem have been defined as cognitive and affective appraisals of one's body that develop with socialization and experience.² Body shame in women has been associated with greater sexual self-consciousness, less sexual pleasure, and more sexual problems.¹ Previous research also has implicated body esteem in the sexual desire of women.³ Research has demonstrated that negative body evaluations during sexual activity can negatively affect sexual functioning owing to cognitive and affective interference⁴ and are significantly related to fewer sexual experiences, less sexual

assertiveness, and more sexual anxiety and avoidance.⁵ Pujols et al⁶ found that higher levels of body esteem predicted higher levels of women's sexual satisfaction even after controlling for sexual functioning. However, other research has found no significant relation between women's body image and sexual satisfaction after controlling for body mass and relational factors.⁷

Sexual traumatization, such as childhood sexual abuse (CSA), seems particularly relevant to one's attitudes toward one's body.^{8,9} This might be due to areas of the women's bodies triggering potentially traumatic memories of the violation against their bodies.¹⁰ Body esteem related to sexual attractiveness has been found to be significantly lower in women with a history of CSA compared with non-abused women.¹¹ In one study, women who experienced sexual traumatization demonstrated significantly more negative body appraisals than did those with non-sexual traumatization or those with no history of trauma.⁹ These results suggest that CSA history is related to individuals' perceptions of, and attitudes toward, their bodies.

Received July 17, 2016. Accepted September 5, 2016.

Department of Psychology, The University of Texas at Austin, Austin, TX, USA

Copyright © 2016, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jsxm.2016.09.004>

Women with CSA histories often develop sexual self-perceptions integrating their early abuse, which can affect their adult sexuality.¹² Women with a history of CSA have reported contrasting tendencies toward seeking out or avoiding sexual experiences, with many women falling at the extremes of this continuum with hypersexual and hyposexual tendencies.¹³ The dual control model describes two neurophysiologic pathways that drive and restrain sexual responses and behavior: sexual excitation and sexual inhibition.^{14–16} Greater sexual excitation and less sexual inhibition have been found to predict for hypersexuality and sexually compulsive behaviors.^{17,18} The sexual excitation and inhibition pathways are believed to form in response to early sexual experiences and respond adaptively.^{15,16} Women with CSA histories form adaptive sexual responses after their abuse that can be influenced by their body appraisals and sexual self-perceptions.

A meta-analysis of various sexual excitation and inhibition responses in women found that women with CSA histories often demonstrate greater inhibitory and less excitatory responses than women without CSA in the presence of sexual stimuli. However, the results also indicated that women with CSA histories showed greater sexual excitation than did non-abused women in the absence of sexual stimuli.¹³ Rellini¹³ argued that the sexual excitation and inhibition pathways of sexual response might allow for hyper- and hyposexual tendencies within the same individual. Little research has been done on potential mechanisms for understanding these sexual responses in women with CSA histories.

Body esteem could play a role in the sexual outcomes of women with CSA histories by acting on sexual excitation and inhibition response pathways. To date, only one study has examined the role of body esteem in the sexual response of women with a history of CSA. In a sample of 57 women with CSA histories and 47 controls, Wenninger and Heiman¹¹ found that body image variables related to health and sexual attractiveness explained a significant amount of the variance in women's reported sexual functioning even after controlling for CSA.

AIM

The present study aimed to expand on these findings by assessing potential differences in body esteem between women with and women without a history of CSA and determining the role body esteem plays in these women's sexual excitation and inhibition responses. We hypothesized (i) CSA history would moderate the relation between body esteem and sexual response, such that women with a history of CSA and low body esteem would demonstrate more sexual inhibition and less sexual excitation than non-abused women, and (ii) body esteem would be a unique predictor of sexual response in women with a CSA history after controlling for other known correlates of sexual response.

METHODS

Participants and Procedure

Recruitment

Participants were recruited using newspaper advertisements and posts on community websites. Advertisements for women with a history of CSA called for women with a history of unwanted sexual contact in childhood who were interested in receiving psychological treatment for sexual problems. Advertisements for women without a history of CSA called for women who were interested in participating in a study on women's sexual experiences and sexual health (see Meston et al¹⁹ for a description of the treatment protocol and Harte et al²⁰ for participant attrition). Women who were interested in the study called the laboratory and were given an initial telephone screening interview. Those who met the requirements were scheduled for a more intensive intake interview in which all eligibility criteria were confirmed. Recruitment began in 2006 and was completed in 2010.

Inclusion and Exclusion Criteria

To be included in the study, women with and without a history of CSA were required to be at least 18 years of age, sexually active, and report sexual dysfunction, distress, or low sexual satisfaction. Exclusion criteria were women younger than 18 years old, not sexually active at the time of the study, receiving psychotherapy for sexual or abuse-related concerns at the time of the study, having experienced a traumatic event in the 3 months before the study, having experienced sexual abuse or assault within 2 years before the study, having an untreated psychiatric disorder in the 6 months before the study, being in an abusive relationship at the time of the study, currently using illicit drugs, or currently suicidal. Women without CSA histories also were excluded if they reported any history of unwanted sexual experiences as an adult. Women who were taking psychoactive medications were allowed in the study if they were on a stable dose for at least 3 months before the study.

Two hundred twenty-five women with CSA histories were screened for eligibility. Forty-one women were excluded for eligibility reasons (absence of sexual problems, $n = 17$; sexual abuse within the past 2 years, $n = 10$; concomitant psychotherapy, $n = 8$; suicidality, $n = 6$; travel or time commitment difficulties, $n = 7$). An additional 38 women who were eligible to participate in the study withdrew from the study before their first assessment. The final sample with CSA histories was comprised of 139 women.

Procedure

Eligible women came into the laboratory for their intake assessment as part of a larger treatment outcome study¹⁹ and signed an informed consent form before completing measurements on their sexual experience history, cognitive and affective appraisals of their body and bodily functions, depression

Table 1. Characteristics of the abuse experienced by the women with childhood sexual abuse histories as measured by the Childhood Sexual Abuse Measure (n = 139)*

Abuse characteristics	In childhood (0–11 y), n (%)	In adolescence (11–17 y), n (%)
Touched, pinched, fondled		
Onset [†]	105 (75.5)	13 (9.3)
One time	5 (4.6)	8 (5.8)
Multiple times	100 (71.9)	84 (60.4)
Family member perpetrator	79 (56.8)	50 (36.0)
Non-familial perpetrator	60 (43.2)	94 (67.6)
Forced to touch another's genitals		
Onset [†]	77 (55.4)	11 (7.9)
One time	9 (6.5)	11 (7.9)
Multiple times	68 (48.9)	41 (29.5)
Family member perpetrator	58 (42.7)	34 (24.5)
Non-familial perpetrator	36 (25.9)	42 (30.2)
Forced oral sex		
Onset [†]	52 (37.4)	17 (12.2)
One time	4 (2.9)	13 (9.4)
Multiple times	48 (34.5)	28 (20.1)
Family member perpetrator	43 (30.9)	25 (18.0)
Non-familial perpetrator	20 (14.4)	33 (23.7)
Forced intercourse		
Onset [†]	65 (46.8)	26 (18.7)
One time	15 (10.8)	25 (18.0)
Multiple times	50 (36.0)	36 (25.9)
Family member perpetrator	50 (36.0)	32 (23.0)
Non-familial perpetrator	28 (20.1)	47 (33.8)

*Percentages listed are of those who reported a history of childhood sexual abuse, not the entire sample.

[†]Developmental stage in which that abuse experience first occurred.

symptomology, and their sexual responses. All study procedures were approved by the institutional review board of The University of Texas at Austin.

Sample Characteristics

The final sample used in analyses (N = 222) included 139 women with a history of CSA (at least one involuntary sexual experience, defined as unwanted oral, anal, or vaginal intercourse, penetration of the vagina or anus using objects or digits, or genital touching or fondling before 18 years of age) and 83 women without a history of CSA. Of the women with CSA histories, 105 (75.54%) reported a CSA experience of penetrative vaginal or anal intercourse or oral sex. Regardless of the type of CSA experienced, most reported these experiences occurring multiple times and beginning in childhood (0–11 years old) as opposed to adolescence (12–17 years old). Frequencies and descriptive information about the CSA experiences of the present sample are presented in Table 1.

Participants' age ranged from 18 to 64 years (mean = 34, SD = 10.88) and participants were relatively well educated, with most having completed at least some college-level education (71.70%). Most women were Caucasian (68.00%) and married or in a committed relationship (58.50%). Self-reported sexual orientation on a six-point Kinsey scale demonstrated that most

women rated themselves as exclusively (39.60%) or predominantly (37.40%) heterosexual. Women with CSA histories were significantly older (mean = 34.40, SD = 10.05) than women without CSA histories (mean = 30.93, SD = 11.14, $t_{217} = -2.38$, $P = .018$, $d = 0.33$); however, age was not significantly related to any of the outcome measurements at the bivariate level (body esteem, sexual excitation, sexual inhibition) and therefore was not controlled for in analyses of group differences on these measurements. Full demographic information is presented in Table 2 and bivariate correlation coefficients of all continuous measures and participant age are listed in Table 3.

Materials

Childhood Trauma Questionnaire—Sexual Abuse Factor

The Childhood Trauma Questionnaire—Sexual Abuse Factor²¹ was used to confirm the presence of childhood sexual abuse in the sample after initial intake screening. Participants respond to questions phrased as “When I was a child ...” on a five-point Likert-style response set from 1 (never true) to 5 (very often true). Participants who responded to the experiences as having occurred (responses > 1 [never true]) were coded as having a history of CSA. The continuous score was averaged and used to determine the pervasiveness of the abuse. The Childhood

Table 2. Demographic information for entire sample and by CSA Hx status

Variable	Entire sample (N = 222)	No CSA Hx (n = 83)*	CSA Hx (n = 139)†
Age (y), mean (SD); range	33.10 (10.58); 18–64	30.93 (11.14); 18–64	34.40 (10.05); 19–63
Race and ethnicity, n (%)‡			
Caucasian	151 (68.0)	58 (69.9)	93 (66.9)
African American	23 (10.4)	7 (8.4)	16 (11.5)
Native American	13 (5.9)	2 (2.4)	11 (7.9)
Hispanic or Latina	31 (14.0)	8 (9.6)	23 (15.5)
Asian American	12 (5.4)	7 (8.4)	5 (3.6)
Other	12 (5.4)	4 (4.8)	8 (5.8)
Missing	3 (1.4)	1 (1.2)	4 (2.8)
Education completed, n (%)			
Some high school or less	4 (1.8)	1 (1.2)	3 (2.2)
High school or GED	22 (9.9)	7 (8.4)	15 (10.8)
Some college or degree	160 (72.1)	59 (71.7)	101 (72.7)
Advanced degree	33 (14.9)	15 (18.1)	18 (12.9)
Missing	3 (1.4)	1 (1.2)	2 (1.4)
Relationship status, n (%)			
Single, not dating	46 (20.7)	20 (24.1)	26 (18.7)
Single, dating	37 (16.7)	21 (25.3)	16 (11.5)
Committed	82 (36.9)	32 (38.6)	50 (36.0)
Married	48 (21.6)	7 (8.4)	41 (29.5)
Missing	9 (4.1)	3 (3.6)	6 (4.3)
Relationship history, n (%)			
Divorced	69 (31.1)	17 (20.5)	52 (37.4)
Separated	12 (5.4)	3 (3.6)	9 (6.4)
Widowed	2 (0.9)	0 (0.0)	2 (1.4)
Never married	129 (58.1)	60 (72.3)	69 (49.6)
Missing	10 (4.6)	3 (3.6)	7 (5.0)
Sexual orientation, n (%)			
0 (exclusively heterosexual)	88 (39.6)	37 (44.6)	51 (36.7)
1	83 (37.4)	35 (42.2)	48 (34.5)
2	18 (8.1)	6 (7.2)	12 (8.6)
3 (equally heterosexual and homosexual)	11 (5.0)	1 (1.2)	10 (7.2)
4	3 (1.4)	0 (0.0)	3 (2.2)
5	7 (3.2)	1 (1.2)	6 (4.3)
6 (exclusively homosexual)	4 (1.8)	1 (1.2)	3 (2.2)
Missing	8 (3.6)	2 (2.4)	6 (4.3)

CSA Hx = childhood sexual abuse history; GED = General Educational Development.

*Women with no reported history of CSA.

†Women with a reported history of CSA.

‡Race and ethnicity was not mutually exclusive; participants selected all that applied.

Trauma Questionnaire has high reported internal consistency (Cronbach $\alpha = 0.79$ – 0.94) and test-retest reliability (intraclass correlation = 0.88).²²

Childhood Sexual Abuse Measure

The Childhood Sexual Abuse Measure²³ is a 13-item measurement that assesses specific characteristics of abuse including the type of abuse experienced, the duration of the abuse, and the individual's relationship to the perpetrator. For the present study, variables assessing the type of abuse experienced, the developmental stage of onset of the abuse (childhood or adolescence), whether the

perpetrator was a family member, and whether the abuse occurred once or multiple times were investigated descriptively.

Beck Depression Inventory—II

The Beck Depression Inventory—II²⁴ is a widely used and highly validated 21-item questionnaire measuring depression. Participants rate the extent to which they express various depression symptomology on four-point scales. Scores range from 0 to 63, with higher scores reflecting greater depression and scores from 29 to 63 indicating severe depression.²⁵

Table 3. Pearson bivariate correlation coefficients between participant age, depression, sexual excitation, sexual inhibition, body esteem, and CSA pervasiveness, for the entire sample (N = 222)

Variable	1. Age	2. BDI-II	3. SESII-W-SE	4. SESII-W-SI	5. BES-SA	6. BES-WC	7. BES-PC	8. CTQ-SA
1	1	−0.01	0.07	−0.06	−0.04	−0.06	0.03	0.09
2		1	0.06	−0.24 [†]	−0.26 [‡]	−0.24 [†]	−0.26 [‡]	0.31 [‡]
3			1	−0.31 [†]	−0.38 [‡]	−0.11	−0.14 [*]	0.17 [*]
4				1	0.35 [‡]	0.18 [*]	0.16 [*]	−0.25 [‡]
5					1	0.61 [‡]	0.60 [‡]	−0.31 [‡]
6						1	0.66 [‡]	−0.31 [‡]
7							1	−0.26 [‡]
8								1

BDI-II = Beck Depression Inventory—II; BES-PC = Body Esteem Scale—Physical Condition Subscale; BES-SA = Body Esteem Scale—Sexual Attractiveness Subscale; BES-WC = Body Esteem Scale—Weight Concerns Subscale; CTQ-SA = Childhood Trauma Questionnaire—Sexual Abuse Subscale; SESII-W-SE = Sexual Excitation/Sexual Inhibition Inventory for Women—Sexual Excitation Subscale; SESII-W-SI = Sexual Excitation/Sexual Inhibition Inventory for Women—Sexual Inhibition Subscale.

* $P < .05$.

[†] $P < .01$.

[‡] $P < .001$.

Body Esteem Survey

The Body Esteem Survey²⁶ is an inventory in which participants indicate how positively or negatively they feel about 35 different body parts (eg, thighs) and functions (eg, sex drive) on a five-point Likert scale ranging from 1 (I have strong negative feelings) to 5 (I have strong positive feelings). The scale is comprised of three domains of body esteem—sexual attractiveness, weight concerns, and physical condition—that have demonstrated high internal consistency (Cronbach $\alpha = 0.78$, 0.87, and 0.82, respectively).²⁶ Higher scores on each of the subscales indicate more positive body esteem.

Sexual Excitation/Sexual Inhibition Inventory for Women

Women's excitatory and inhibitory sexual responses were assessed using the Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W).²⁷ The SESII-W is a widely used and highly validated 36-item scale that was developed specifically to measure the sexual excitation and inhibition pathways of women based on the dual control model.²⁷ Items are rated on a four-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree), with lower scores reflecting greater excitation or inhibition responses. The sexual excitation factor has demonstrated high internal consistency (Cronbach $\alpha = 0.70$), whereas the sexual inhibition factor has moderate internal consistency (Cronbach $\alpha = 0.55$).²⁴ The normative data of the SESII-W suggest that moderate scores across factors are indicative of normal functioning, with more extreme scores suggesting potentially problematic functioning.²⁷

Statistical Analyses

CSA History

Based on responses to the telephone screen questions about involuntary sexual experiences occurring before 18 years of age and corresponding results on the sexual abuse domain of the

Childhood Trauma Questionnaire, women were coded as having a CSA history if they reported being molested during childhood, were made to engage in sexual activity during their childhood, or self-identified as being sexually abused during childhood. Women who did not report these experiences comprised the no-CSA history group.

Main Outcome Measures

The main predictor variable of the present study was CSA history status (0 = no history of CSA, 1 = CSA history). The main outcome variables of the present study were sexual excitation and sexual inhibition as measured by the SESII-W. Secondary outcome variables were body esteem, as measured by the Body Esteem Survey, and depression symptomology, as measured by the Beck Depression Inventory—II.

The outcome measurements of sexual excitation, sexual inhibition, body esteem, and depression were analyzed for their zero-order correlations (Table 3) with each other and relevant demographics to understand the bivariate relations of the variables within the present sample. Differences between women with and those without a history of CSA on these outcome measurements were assessed to understand group differences in body esteem, depression, and sexual excitation and inhibition. Body esteem and depression also were used as covariates in separate multivariate analyses of covariance on the relation between CSA history and sexual excitation and inhibition responses to assess the interactive influence of CSA history and these variables on reported sexual response. Hierarchical regressions were used to determine the unique role of body esteem as a predictor of sexual response in women with and those without CSA histories separately. Although excitation and inhibition are separate constructs, they are not entirely independent of each other in that inhibition might be related to excitation in the overall sexual

Table 4. Descriptive information of body esteem, sexual excitation, sexual inhibition, and depression for entire sample (N = 222) and by CSA Hx status

Scale	Group	n	Mean (SD)	Range	95% CI	
					LL	UL
BDI-II		202	15.95 (10.47)	0–42	14.49	17.40
	No CSA*	78	11.85 (9.70)	0–38	9.66	14.03
	CSA Hx†	124	18.52 (10.15)	0–42	16.72	20.33
SESII-W-SE		212	43.03 (8.93)	25–84	42.82	44.24
	No CSA	83	41.57 (7.25)	25–66	39.98	43.15
	CSA Hx	129	43.97 (9.77)	27–84	42.27	45.67
SESII-W-SI		212	33.57 (7.21)	17–54	32.59	34.55
	No CSA	83	35.99 (6.23)	22–54	34.63	37.35
	CSA Hx	129	32.02 (7.39)	17–54	30.73	33.30
BES-SA		222	48.11 (8.76)	23–69	46.95	49.27
	No CSA	83	51.75 (7.38)	35–69	50.13	53.36
	CSA Hx	139	45.94 (8.82)	23–68	44.46	47.00
BES-WC		222	29.57 (9.15)	10–50	28.36	30.78
	No CSA	83	33.06 (8.82)	15–50	31.13	34.99
	CSA Hx	139	27.49 (8.72)	10–50	26.03	28.95
BES-PC		222	29.17 (6.88)	9–45	28.26	30.08
	No CSA	83	31.31 (6.58)	16–45	29.88	32.75
	CSA Hx	139	27.89 (6.77)	9–45	26.75	29.03

BDI-II = Beck Depression Inventory–II; BES-PC = Body Esteem Scale–Physical Condition Subscale; BES-SA = Body Esteem Scale–Sexual Attractiveness Subscale; BES-WC = Body Esteem Scale–Weight Concerns Subscale; CSA Hx = childhood sexual abuse history; LL = lower limit; SESII-W-SE = Sexual Excitation/Sexual Inhibition Inventory for Women–Sexual Excitation Subscale; SESII-W-SI = Sexual Excitation/Sexual Inhibition Inventory for Women–Sexual Inhibition Subscale; UL = upper limit.

*Women with no reported CSA Hx.

†Women with reported CSA Hx.

response.¹⁶ As such, sexual inhibition was used as a control variable (entered at step 1) in regressions on sexual excitation.

RESULTS

Group Differences

To assess for differences between women with and those without a history of CSA on depression symptomology, the three domains of body esteem, the two pathways of sexual response, and a series of two-sided independent-samples t-tests with a Bonferroni adjustment for number of comparisons ($k = 6$; $\alpha/6 = 0.008$) were run. With all parametric assumptions met, results demonstrated that women with a history of CSA reported significantly more depressive symptomology than those without a CSA history ($t_{200} = -4.63$, $P < .001$, $d = 0.67$). Women with CSA histories also had significantly lower body esteem ($t_{220} = 5.07$, $P < .001$, $d = 0.68$) across all three domains (sexual attractiveness, weight concerns, and physical condition) compared with non-abused women, with the strongest effect demonstrated for body esteem related to sexual attractiveness ($t_{220} = 5.03$, $P < .001$, $d = 0.68$).

Women with CSA histories had significantly more sexual inhibition ($t_{210} = 4.06$, $P < .001$, $d = 0.70$) than women with no history of CSA. There was no significant difference between

women with and those without a history of CSA on sexual excitation ($t_{210} = -1.94$, $P = .056$, $d = 0.27$). Women with a history of CSA demonstrated a wider range of sexual excitation than non-abused women. The mode for sexual excitation of women with a history of CSA was 41, whereas the mode for non-abused women was 36. Recall that higher scores reflect less sexual excitation. Group and sample means are presented in Table 4 for all outcome variables.

Given the group differences in depressive symptomology, a multivariate analysis of covariance was conducted to assess the role of depression in the relations between CSA history and sexual excitation and inhibition. With all assumptions met, there was a significant main effect of CSA history after controlling for depression on sexual excitation and inhibition at the multivariate level (Wilks $\lambda = 0.964$, $F_{2,192} = 3.59$, $P = .030$, $d = 0.39$). There also was a significant covariate effect of depression symptomology on sexual excitation and inhibition at the multivariate level (Wilks $\lambda = 0.963$, $F_{2,192} = 3.69$, $P = .027$, $d = 0.39$), but the interaction between CSA history and depression symptomology was not significant.

Between-subjects effects demonstrated that CSA history had a small significant effect on sexual inhibition ($F_{1,193} = 6.54$, $P = .011$, $d = 0.37$), but not on sexual excitation. Depressive

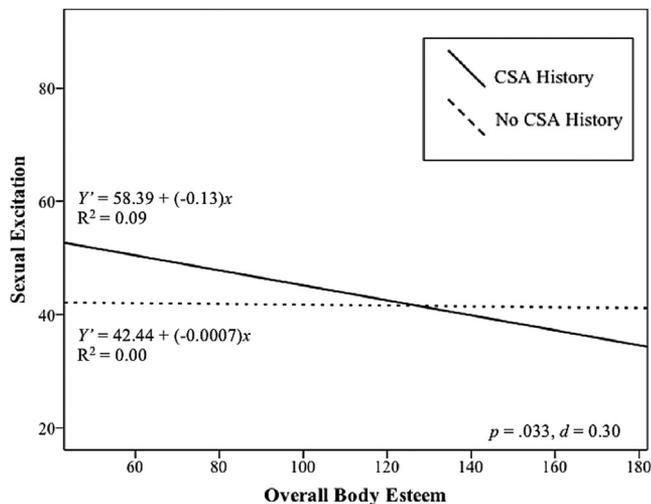


Figure 1. Interaction between body esteem and childhood sexual abuse (CSA) history for sexual excitation.

symptomology also had a small but significant effect on sexual inhibition ($F_{1,193} = 7.00$, $P = .009$, $d = 0.38$), but not on sexual excitation. The interaction of CSA history and depression did not have a significant effect on sexual excitation or inhibition. The results suggest that CSA history and depression are related to the sexual inhibition of women, and that CSA history maintains a unique effect on the sexual inhibition of women despite their depressive symptomology.

To determine the role of body esteem on the relations between CSA history and sexual excitation and inhibition, a multivariate analysis of covariance was conducted that included the interaction between CSA history and body esteem. With all assumptions met, there was a significant main effect of CSA history after controlling for body esteem on sexual excitation and inhibition (Wilks $\lambda = 0.966$, $F_{2,207} = 3.67$, $P = .027$, $d = 0.38$). There was a significant covariate effect of body esteem on sexual excitation and inhibition (Wilks $\lambda = 0.958$, $F_{2,207} = 4.52$, $P = .012$, $d = 0.42$). The interaction between body esteem and CSA history also approached significance (Wilks $\lambda = 0.974$, $F_{2,270} = 2.75$, $P = .066$, $d = 0.33$). The results demonstrate that CSA history and body esteem explained the variance in the sexual responses of these women independently and in combination with each other.

The between-subjects effects demonstrated that CSA history had small but significant effects on sexual excitation ($F_{1,208} = 5.24$, $P = .023$, $d = 0.32$) and sexual inhibition ($F_{1,208} = 3.96$, $P = .048$, $d = 0.28$) after controlling for body esteem. Body esteem had significant small covariate effects on sexual excitation ($F_{1,208} = 5.74$, $P = .017$, $d = 0.33$) and sexual inhibition ($F_{1,208} = 5.61$, $P = .019$, $d = 0.33$). The interaction between body esteem and CSA history also demonstrated a significant small effect on sexual excitation ($F_{1,208} = 4.63$, $P = .033$, $d = 0.30$), but not on sexual inhibition ($F_{1,208} = 2.11$, $P = .148$, $d = 0.20$). The results indicate CSA history significantly moderated the relation between body esteem and

sexual excitation, but not sexual inhibition. Poor body esteem might be more predictive of lower levels of sexual excitation for women with a history of CSA than for women without a history of CSA, although this effect was not found for sexual inhibition. The interaction between body esteem and CSA history for sexual excitation is depicted in Figure 1, in which the relation of body esteem to sexual excitation for those women with CSA history is in contrast to the lack of relation of body esteem to sexual excitation for those women without a CSA history.

Multiple Regressions

Bivariate Pearson correlation coefficients were assessed for the relations among sexual excitation, sexual inhibition, body esteem domains of sexual attractiveness, weight concerns, and physical condition, and two known correlates of sexual response, depressive symptomology and participant age. The associations of these variables were assessed in women with and those without a history of CSA separately to determine the different correlates of sexual excitation for each group. Variables that were significantly related to sexual excitation at the bivariate level were entered into hierarchical multiple regressions to determine the best model for predicting sexual excitation in that group. Bivariate Pearson correlation coefficients for the relations between variables for the separate groups are listed in Table 5.

In the multiple regression analysis for sexual excitation in women with a history of CSA, sexual inhibition was entered into the model at step 1 to control for its significant relation with sexual excitation ($r = -0.36$, $P < .001$). At step 2, body esteem domains sexual attractiveness ($r = -0.44$, $P < .001$) and physical condition ($r = -0.19$, $P = .032$) were added into the model with sexual inhibition. Weight concern body esteem, age, and depression were not significantly related to sexual excitation at the bivariate level for women with a CSA history. All assumptions for a parametric linear regression were met. Sexual inhibition alone accounted for 13.10% of the variance in sexual excitation. Adding sexual attractiveness and physical condition to the model explained 25.30% of the variance in sexual excitation for women with a history of CSA, which corresponded to a significant increase ($F\Delta = 10.15$, $P < .001$).

At step 2, body esteem related to sexual attractiveness had the largest effect on predicting these women's sexual excitation ($\beta = -0.41$), followed by sexual inhibition ($\beta = -0.25$), which remained significant with the addition of body esteem variables. Body esteem related to physical condition was no longer significant as a predictor of sexual excitation when entered into the model. These results, as presented in Table 6, indicate that body esteem related to sexual attractiveness is a significant unique predictor of the sexual excitation of women with a history of CSA after controlling for their sexual inhibition. A multiple regression for sexual excitation of women without a history of CSA was not

Table 5. Pearson bivariate correlation coefficients for sexual excitation, sexual inhibition, body esteem, and depression by CSA Hx status

Variable	1. Age	2. BDI-II	3. SESII-W-SE	4. SESII-W-SI	5. BES-WC	6. BES-PC	7. BES-SA
Women with CSA Hx							
1	1	-0.05	-0.01	-0.00	-0.06	0.03	0.00
2		1	0.08	-0.11	-0.17	-0.17	-0.17
3			1	-0.36 [†]	-0.14	-0.19*	-0.44 [†]
4				1	0.19*	0.15	0.32 [†]
5					1	0.65 [†]	0.59 [†]
6						1	0.58 [†]
7							1
Women with no CSA Hx							
1	1	-0.10	0.16	-0.05	0.05	0.13	0.02
2		1	-0.07	-0.30 [†]	-0.16	-0.24*	-0.21
3			1	-0.12	0.06	0.03	-0.15
4				1	-0.04	0.02	-0.23*
5					1	0.61 [†]	0.55 [†]
6						1	0.56 [†]
7							1

BDI-II = Beck Depression Inventory-II; BES-PC = Body Esteem Scale-Physical Condition Subscale; BES-SA = Body Esteem Scale-Sexual Attractiveness Subscale; BES-WC = Body Esteem Scale-Weight Concerns Subscale; CSA Hx = childhood sexual abuse history; SESII-W-SE = Sexual Excitation/Sexual Inhibition Inventory for Women-Sexual Excitation Subscale; SESII-W-SI = Sexual Excitation/Sexual Inhibition Inventory for Women-Sexual Inhibition Subscale.

*P < .05.

†P < .01.

‡P < .001.

run because there were no variables that were significantly related to sexual excitation at the bivariate level (Table 5). Evidently, body esteem is not a significant variable in the prediction of these women’s sexual excitation.

DISCUSSION

The present study examined the role of body esteem in the sexual excitatory and inhibitory responses of women with and without CSA histories while considering other known correlates of sexual response (eg, depression). Women with CSA histories reported significantly more depressive symptomology, significantly lower body esteem about their weight, physical condition, and sexual attractiveness, and more sexual

inhibition than did non-abused women. Women with CSA histories reported significantly more sexual inhibition than did non-abused women after controlling for their depressive symptomology and overall body esteem. After controlling for the effects of body esteem, women with a history of CSA also reported significantly less sexual excitation than did non-abused women.

CSA history significantly moderated the relation between body esteem and sexual excitation. Decreases in reported body esteem were predictive of decreases in sexual excitation only for women with a history of CSA, whereas decreases in body esteem were predictive of sexual inhibition for women regardless of whether they had experienced CSA. Body esteem related to sexual attractiveness in particular was found to be a uniquely

Table 6. Hierarchical multiple regression for sexual excitation for women with a history of childhood sexual abuse (n = 139)

Step	Variables(s) entered	R	R ²	Adjusted R ²	R ² change	S	β	t	p _r
1		0.36	0.13	0.12	0.13*	9.14			
	SESII-W-SI						-0.36	-4.38*	-0.36
2		0.50	0.25	0.24	0.12*	8.55			
	SESII-W-SI						-0.25	-3.01*	-0.26
	BES-SA						-0.41	-4.15*	-0.35
	BES-PC						0.09	0.92	0.08

BES-PC = Body Esteem Scale-Physical Condition Subscale; BES-SA = Body Esteem Scale-Sexual Attractiveness Subscale; SESII-W-SE = Sexual Excitation/Sexual Inhibition Inventory for Women-Sexual Excitation Subscale; SESII-W-SI = Sexual Excitation/Sexual Inhibition Inventory for Women-Sexual Inhibition Subscale.

*P < .001.

salient predictor of sexual excitation in these women. Women with CSA histories and more negative appraisals of their bodies, particularly their sexual attractiveness, demonstrated less sexual excitation than those without CSA histories.

CSA history has been shown to increase the likelihood of body-related disorders⁸ and negative body appraisals in women.^{9,10} Finkelhor and Browne's¹² traumagenic dynamics model proposed that women with CSA histories often develop distorted sexual self-perceptions from their early abuse. The experience of CSA might result in particularly negative affective appraisals of the body's sexuality and attractiveness from the pairing of body violations with sexuality.^{8–10} That is, if a child's body is sexually abused before the child develops body and sexuality schemas, the child might begin to associate the body with the abuse, causing negative reactions toward the body. The present findings support the association between CSA and negative body appraisals.

Previous research has supported the relation between low body esteem and sexual inhibition.⁵ Wiederman⁵ found that women with greater body self-consciousness during sexual activity reported greater sexual anxiety and avoidance, less sexual assertiveness, and fewer sexual experiences than did women with lower body self-consciousness. Past research also has established a strong link between depression and sexual response and function.²⁸ Dunlop et al²⁹ found that greater depressive symptomatology mediated the relation between CSA history and sexual functioning. These results are congruent with the present findings that low body esteem, depression, and CSA history uniquely predict for higher levels of inhibitory sexual responses in women.

Finkelhor and Browne's¹² model also proposed that women often internalize blame and guilt for their early sexual abuse that affects their adult sexuality by creating a fear or aversion to sexuality. The literature suggests that perceptions of sexual stimuli and interactions can trigger anxiety about sexuality for women with sexual trauma.¹³ Previous research has shown that some women with CSA histories exhibit heightened cortisol in response to sexual stimuli.³⁰ An increase in cortisol might represent a stress reaction to the stimuli, which in turn might lead to inhibitory sexual responses. The dual control model posits perceptions of sexual stimuli as threatening, which would adaptively increase inhibition to avoid the threat.¹⁶ The present study corroborates this theory because women with CSA histories reported more inhibition than women without a CSA history.

Past research has shown that women with a history of CSA often demonstrate significantly less sexual excitation and significantly more sexual inhibition than women without CSA histories in response to sexual stimuli.¹³ Although the present study demonstrated this difference in sexual inhibition, the difference in excitation was not observed until after controlling for body esteem. Sexual stimuli have been shown to trigger dissociative responses in women with CSA histories. Dissociation in turn can prevent the expression of physiologic excitation. In non-sexual contexts, these same women have reported intrusive sexual

thoughts that increase cognitive and behavioral excitatory responses.¹³ These results suggest high and low excitation might be present within the same individual in different contexts, a phenomenon that might not be captured in aggregate self-report measurement data. Women's negative body perceptions could play a role in the dissociation during sexual activity, such that women dissociate to avoid the negative responses to their body, resulting in lower excitation responses.⁵ Negative body perceptions also might motivate women to seek sexual activity (ie, a behavioral excitatory response) to acquire body affirmation.¹⁸ Indeed, in men, inhibitory responses related to fears of sexual dysfunction have been associated with greater sexual compulsivity (a behavioral excitation response).¹⁸ This could explain why sexual excitation differences between the two groups are not seen until after controlling for body esteem.

A history of CSA is a predictor of risk for eating disorders and sexual dysfunction^{31–35} and has been repeatedly implicated in the development of distorted body image and negative body appraisals in the eating disorder literature.³¹ Specifically, a history of CSA has been linked to the psychological dysregulation of behavioral activation (eg, bingeing) and restriction (eg, starving) pathways involved in disordered eating.³² The conceptual model of the behavioral activation and restriction pathways³⁶ implicated in disordered eating are similar to the dual control model's excitation and inhibition pathways of sexual response¹⁶ implicated in sexual dysfunction. The comorbidity of eating disorders and sexual dysfunction in women with a CSA history highlights the importance of body-related concerns in women with a CSA history on the activation and restriction pathways related to the body (eg, sex, eating). One study demonstrated that the sexual functioning of women with CSA histories and comorbid eating disorders did not show the same gains from cognitive behavioral therapy that were seen in non-abused women with eating disorders.³⁵ The women with a CSA history also reported no change in body shape concerns after treatment in contrast to the decreases in body concerns seen in the non-abused women. Similar to the present study, the results suggest that CSA has a particularly profound relation with body perceptions and sexual response.

The pairing of one's sexuality with negative affect and cognitions from early sexual abuse can result in distorted appraisals of one's body and sexuality,¹² which can cause body esteem related to sexual attractiveness to be particularly salient for the sexual response of these women. In line with our hypothesis, body esteem related sexual attractiveness was found to have the strongest relation with sexual excitation for women with CSA histories. Even after controlling for their sexual inhibition, perceived sexual attractiveness uniquely predicted for sexual excitation in these women. Similarly, Weninger and Heiman¹¹ found that sexual attractiveness accounted for decrements in sexual functioning even after controlling for sexual abuse history. Women's perception of their body's sexual attractiveness plays a substantial role in the sexual response of women with CSA histories.

Sexual excitation and inhibition pathways are formed based on early sexual experiences,¹⁵ and the present study suggests that CSA might have a significant impact on the regulation of sexual inhibition and, in combination with lower levels of perceived sexual attractiveness and body esteem, the sexual excitation pathways in women. The relation needs to be explored further across different domains of sexual response. The present study exemplifies a starting point for further research examining the role of body esteem in the sexual responses of women with CSA histories.

Limitations and Future Research

Some study limitations warrant mention. We did not assess some potentially relevant demographic information in the present sample, such as religiosity, that might have played a critical role in how women responded sexually to their CSA. Also, although we did report the developmental stage (ie, childhood or adolescence) that the CSA began, we did not gather information on the actual age that the CSA onset occurred, which is needed to determine how long ago the experiences occurred. Length of time since the CSA occurred might be an important variable to consider in future studies when examining the array of sexual outcomes in women with CSA histories. Adding a comparison group of women who experienced other (non-sexual) forms of childhood maltreatment also could be a consideration for future research. This would help isolate the effects of sexual abuse in comparison with early abuse more generally.

Another study limitation is that, although we excluded women from the study who were currently seeking treatment for CSA or other sexual concerns, we did not collect information on how many women previously sought therapy or treatment for CSA or sexuality concerns. Treatment-seeking history of women with CSA might be a potential confound for results, in that effective treatment might have decreased group differences between those with and those without CSA histories. For women with and those without CSA histories, the study recruited women who reported sexual concerns. With the two groups perceiving themselves as being below normative levels of sexual functioning, this might be part of the reason why there were no significant differences between groups on sexual excitation at the univariate level. This recruitment method also might explain why age, a risk factor commonly associated with sexual dysfunction, was not related to sexual excitation or inhibition for women in the present sample, in that sexual concerns were reported across the age span.

An additional study limitation is that the lack of a difference in sexual excitation noted between the women with and those without CSA histories could feasibly be explained by a lack of context in sexual response measurement. The SESII-W, which was used in this study, measures sexual excitation with items focused on the ease of arousability and measures sexual inhibition with items focused on external factors that inhibit arousal.²⁷ Differences in the excitation responses of women with and

without CSA histories might depend on external factors (eg, with a partner opposed to alone). This measurement might not capture these external contextual factors for excitation the way it does for inhibition in these women. Future research might examine the factor structure and validity of the SESII-W for women with CSA histories.

CONCLUSIONS

The present study found that low body esteem predicts high sexual inhibition in women overall and predicts low sexual excitation in women with CSA histories. These findings have potential implications for clinicians working with women with sexual concerns. Thorough evaluations of women's affective appraisals of their bodies could add to the understanding of women's sexual concerns and the array of sexual sequelae that can follow CSA. Women seeking treatment for sexual inhibition (eg, fears of their sexual functioning impeding their arousal) might benefit from interventions aimed at increasing their overall body esteem. Treatment interventions for increasing sexual excitation responses (eg, arousability) of women with CSA histories in particular should incorporate treatments that increase positive body appraisals and sexual attractiveness in relation to body esteem.

Corresponding Author: Cindy M. Meston, PhD, Department of Psychology, The University of Texas at Austin, 108 E. Dean Keeton Street, A800, Seay Psychology Building, SEA 3.318, Austin, TX 78727, USA; E-mail: mestoncm@gmail.com

Conflicts of Interest: The authors report no conflicts of interest.

Funding: This research was supported by Grant Number 1 RO1 HD051676 from the National Institute of Child Health and Human Development (NICHD) to Cindy M. Meston. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NICHD.

STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Chelsea D. Kilimnik; Cindy M. Meston

(b) Acquisition of Data

Cindy M. Meston

(c) Analysis and Interpretation of Data

Chelsea D. Kilimnik; Cindy M. Meston

Category 2

(a) Drafting the Article

Chelsea D. Kilimnik

(b) Revising It for Intellectual Content

Chelsea D. Kilimnik; Cindy M. Meston

Category 3

(a) Final Approval of the Completed Article

Chelsea D. Kilimnik; Cindy M. Meston

REFERENCES

1. Sanchez DT, Kiefer AK. Body concerns in and out of the bedroom: implications for sexual pleasure and problems. *Arch Sex Behav* 2007;36:808-820.
2. Young L. Sexual abuse and the problem of embodiment. *Child Abuse Negl* 1992;16:89-100.
3. Seal BN, Bradford A, Meston CM. The association between body esteem and sexual desire among college women. *Arch Sex Behav* 2009;38:866-872.
4. Meston CM. The effects of state and trait self-focused attention on sexual arousal in sexually functional and dysfunctional women. *Behav Res Ther* 2006;44:512-532.
5. Wiederman MW. Women's body image self-consciousness during physical intimacy with a partner. *J Sex Res* 2000;37:60-68.
6. Pujols Y, Meston CM, Seal BN. The association between sexual satisfaction and body image in women. *J Sex Med* 2010;7:905-916.
7. Milhausen RR, Buchholz AC, Opperman EA, et al. Relationships between body image, body composition, sexual functioning, and sexual satisfaction among heterosexual young adults. *Arch Sex Behav* 2015;44:1621-1633.
8. Didie ER, Tortolani CC, Pope CG, et al. Childhood abuse and neglect in body dysmorphic disorder. *Child Abuse Negl* 2006;30:1105-1115.
9. Sack M, Boroske-Leiner K, Lahmann C. Association of nonsexual and sexual traumatizations with body image and psychosomatic symptoms in psychosomatic outpatients. *Gen Hosp Psychiatry* 2010;32:315-320.
10. Dyer AS, Feldmann RE Jr, Borgmann E. Body-related emotions in posttraumatic stress disorder following childhood sexual abuse. *J Child Sex Abuse* 2015;24:627-640.
11. Wenninger K, Heiman JR. Relating body image to psychological and sexual functioning in child sexual abuse survivors. *J Trauma Stress* 1998;11:543-562.
12. Finkelhor D, Browne A. The traumatic impact of child sexual abuse: a conceptualization. *Am J Orthopsychiatry* 1985;55:530-541.
13. Rellini A. Review of the empirical evidence for a theoretical model of understanding the sexual problems of women with a history of CSA. *J Sex Med* 2008;5:31-46.
14. Bancroft J. Central inhibition of sexual response in the male: a theoretical perspective. *Neurosci Biobehav Rev* 1999;23:763-784.
15. Bancroft J, Graham CA, Janssen E, et al. The dual control model: current status and future directions. *J Sex Res* 2009;46:121-142.
16. Janssen E, Bancroft J. The dual control model: the role of sexual inhibition and excitation in sexual arousal and behavior. In: Janssen E, ed. *The psychophysiology of sex*. Bloomington: Indiana University Press; 2007. p. 197-222.
17. Muise A, Milhausen RR, Cole SL, et al. Sexual compulsivity in heterosexual married adults: The role of sexual excitation and inhibition in individuals not considered "high-risk". *Sex Addict Compulsivity* 2013;20:192-209.
18. Rettenberger M, Klein V, Briken P. The relationship between hypersexual behavior, sexual excitation, sexual inhibition, and personality traits. *Arch Sex Behav* 2016;45:219-233.
19. Meston CM, Lorenz TA, Stephenson KR. Effects of expressive writing on sexual dysfunction, depression, and PTSD in women with a history of childhood sexual abuse: results from a randomized clinical trial. *J Sex Med* 2013;10:2177-2189.
20. Harte CB, Hamilton LD, Meston CM. Predictors of attrition from an expressive writing intervention for sexual abuse survivors. *J Child Sex Abuse* 2013;22:842-857.
21. Bernstein DP, Fink L. *Childhood Trauma Questionnaire: a retrospective self-report questionnaire and manual*. San Antonio, TX: Psychological Corporation; 1998.
22. Bernstein DP, Fink L, Handelsman L, et al. Initial reliability and validity of a new retrospective measure of child abuse and neglect. *Am J Psychiatry* 1994;151:1132-1136.
23. Finkelhor D. *Sexually victimized children*. New York: Free Press; 1979.
24. Beck AT, Steer RA, Brown GK. *Manual for the BDI-II*. San Antonio, TX: Psychological Corporation; 1996.
25. Beck AT, Steer RA, Carbin MG. Psychometric properties of the Beck Depression Inventory: twenty-five years of evaluation. *Clin Psychol Rev* 1988;8:77-100.
26. Franzoi SL, Shields SA. The Body Esteem Scale: multidimensional structure and sex differences in a college population. *J Pers Assess* 1984;48:173-178.
27. Graham CA, Sanders SA, Milhausen RR. The Sexual Excitation/Sexual Inhibition Inventory for Women: psychometric properties. *Arch Sex Behav* 2006;35:397-409.
28. Frolich P, Meston C. Sexual functioning and self-reported depressive symptoms among college women. *J Sex Res* 2002;39:321-325.
29. Dunlop BW, Hill E, Johnson BN, et al. Mediators of sexual functioning and marital quality in chronically depressed adults with and without a history of childhood sexual abuse. *J Sex Med* 2015;12:813-823.
30. Rellini AH, Hamilton LD, Delville Y, et al. The cortisol response during physiological sexual arousal in adult women with a history of childhood sexual abuse. *J Trauma Stress* 2009;22:557-565.
31. Wonderlich SA, Brewerton TD, Jocic Z, et al. Relationship of childhood sexual abuse and eating disorders. *J Am Acad Child Adolesc Psychiatry* 1997;36:1107-1115.
32. Dworkin E, Javdani S, Verona E, et al. Child sexual abuse and disordered eating: the mediating role of impulsive and compulsive tendencies. *Psychol Viol* 2014;4:21-36.
33. Castellini G, Lelli L, LoSauro C, et al. Childhood abuse, sexual function and cortisol levels in eating disorders. *Psychother Psychosom* 2012;81:380-382.
34. Smolak L, Murren SKA. Meta-analytic examination of the relationship between child sexual abuse and eating disorders. *Int J Eat Disord* 2002;31:136-150.
35. Castellini G, LoSauro C, Lelli L, et al. Childhood sexual abuse moderates the relationship between sexual functioning and eating disorder psychopathology in anorexia nervosa and bulimia nervosa: a 1-year follow-up study. *J Sex Med* 2013;10:2190-2200.
36. Gray JA. A critique of Eysenck's theory of personality. In: Eysenck HJ, ed. *A model of personality*. Berlin: Springer-Verlag; 1981. p. 246-276.