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# Between pleasure, guilt, and dissociation: How trauma unfolds in the sexuality of childhood sexual abuse survivors



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#### ABSTRACT

Background: Childhood sexual abuse (CSA) is a significant risk factor for sexual difficulties in adulthood.

*Objective:* In the current study we aimed to expand the understanding of the association between CSA and sexual difficulties by examining the moderating role of traumatic sexuality in the association between CSA and sexual difficulties among a sample of CSA survivors.

Participants and setting: The hypothesized moderation model was examined among a sample of

*Methods*: Significant interactions were probed using simple slopes tests using the *interactions* R package.

Results: The results indicated main effects of traumatic sexuality on survivors' sexual difficulties: Greater severity of dissociation during sex was linked with greater sexual dysfunction and higher compulsive sexual behavior disorder (CSBD), and greater intrusiveness during sex and pleasing the other during sex were linked with higher CSBD. Experiencing higher sex-related guilt and/or shame and hypervigilance with regard to sex were associated with greater sexual dysfunction. As for the moderations, intrusiveness during sex and pleasing the other during sex moderated the association between CSA and sexual dysfunction. Intrusiveness during sex and sex-related guilt and/or shame moderated the association between CSA and CSBD. Intrusiveness during sex, pleasing the other during sex, and/or hypervigilance with regard to sex moderated the association between CSA and problematic pornography use.

Conclusion: This study points to the potential contribution of traumatic sexuality symptoms to sexual difficulties among survivors of CSA and lends support to the idea of offering trauma-focused therapy when treating the sexual difficulties of CSA survivors.

## 1. Introduction

Childhood sexual abuse (CSA) is a central transdiagnostic stressor with potentially meaningful risks for maladaptation in biological and psychological development (Hailes et al., 2019; Shenk et al., 2022). One of the most meaningful implications of CSA is its potentially harmful effects on adult sexuality. Researchers have extensively demonstrated how CSA can result in a variety of different sexual difficulties, including sexual dysfunction (Gewirtz-Meydan & Opuda, 2022; Pulverman et al., 2018), sexual compulsivity and

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risky sexual behaviors including problematic pornography use (Abajobir et al., 2017; Slavin et al., 2020; Vaillancourt-Morel et al., 2015), and lower sexual satisfaction or sexual distress (Rellini & Meston, 2007). Yet a better understanding of the mechanisms underlying sexual difficulties among CSA survivors is vital to developing targeted treatments for sexual difficulties in this population. Thus, in the current study we aimed to shed light on the mechanisms underlying the impact of CSA on adult sexuality, using a trauma perspective. Specifically, we examined the moderating role of traumatic sexuality in the association between CSA and different sexual outcomes.

#### 1.1. Childhood sexual abuse and sexual difficulties

Childhood sexual abuse is an endemic public health and social problem with long-lasting negative effects and elevated associated annual costs (Barth et al., 2013; Hughes et al., 2017; Peterson et al., 2018). According to the World Health Organization (WHO), CSA is defined as "the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society. Childhood sexual abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person" (World Health Organiztion, 1999). Estimates of CSA prevalence worldwide range from 8 to 31 % for girls and 3–17 % for boys (Barth et al., 2013). In their meta-analysis of the worldwide prevalence of CSA, Pereda et al. (2009) found a mean prevalence of 7.9 % in men and 19.7 % in women.

Childhood sexual abuse has been associated with a variety of sexual difficulties, ranging from sexual dysfunction on one end of the spectrum to compulsive sexual behaviors on the other (Aaron, 2012). Sexual dysfunction refers to any problem within the sexual response cycle, including delayed ejaculation, erectile disorder, female orgasmic disorder, female sexual interest/arousal disorder, genito-pelvic pain/penetration disorder, male hypoactive sexual desire disorder, and premature ejaculation (American Psychiatric Association, 2013). The prevalence of adult sexual dysfunction among CSA survivors is higher than it is among non-abused individuals (Leclerc et al., 2010; Swaby & Morgan, 2009). The prevalence of sexual dysfunction among women who experienced CSA has been found to range from 25 % to 59 % (Pulverman et al., 2018) in random probability studies, and from 63 % to 94 % in clinical samples of women survivors of CSA (Sarwer & Durlak, 1996). The prevalence of sexual dysfunction among male survivors of CSA is less documented, but available data indicate that this rate ranges up to 80 % (Gewirtz-Meydan & Opuda, 2022).

Compulsive sexual behavior disorder (CSBD) consists of persistent failure to control intense, recurrent sexual impulses or urges, resulting in repetitive sexual behavior over an extended period that generates marked distress or impairment in functioning (Reed et al., 2022). The experience of CSA has been linked to CSBD (Slavin et al., 2020). One of the most common repetitive sexual behaviors among individuals with CSBD is problematic pornography use. Problematic pornography use is defined as an uncontrollable pattern of pornography use resulting in significant distress and adverse consequences (Grubbs et al., 2020). Although there is an extensive amount of research tying together CSA and CSBD (Slavin et al., 2020), research on the association between CSA and problematic pornography use during adulthood is scarce. In one study it was suggested that child sexual and physical abuse predicts pornography use among women, but not among men (Seidman, 2003). Problematic pornography use can be seen as impersonal sex, enabling the reduction of sexual urges without the risk of engaging in intimacy and relationships (Långström & Hanson, 2006). Avoiding closeness and intimacy is common among survivors of CSA, many of whom suffer from difficulties with trust (Nielsen et al., 2018) and attachment trauma (Gewirtz-Meydan & Lahav, 2020).

## 1.2. Traumatic sexuality as a potential moderator

Traumatic sexuality specifically refers to the reenactment of the trauma within adult sexual activities – that is, it refers to how trauma and its impacts are unfolded *within* the sexual realm and thus to what extent the CSA survivor is experiencing traumatic reactions *during* sexual activities (Gewirtz-Meydan & Lassri, 2022). The concept of traumatized sexuality has been developed based on two key theories: The traumagenic model and theories of embodiment. According to the traumagenic model (Finkelhor & Browne, 1985), four traumagenic dynamics occur during child sexual abuse: betrayal, powerlessness, stigmatization, and sexualization, which can account for the development of sexual difficulties following child sexual abuse. Sexualization refers to the process by which a child's sexuality is modified and influenced as a result of experiencing sexual abuse.

Theories of embodiment posit that trauma is reflected in the body and that the memory of trauma is stored in the somatosensory system (Ensink et al., 2016; van der Kolk, 2014). According to this theory, traumatic experiences that are stored and expressed in the body, including sensations, emotions, and physical responses and can also explain one's sexual difficulties. This is especially true when the traumatic experiences included unwanted or painful touch are thought to be stored in the body as implicit memories and unpleasant sensations, and impact one's ability to experience sexual pleasure (Gewirtz-Meydan & Ofir-Lavee, 2020; Zoldbrod, 2015).

Both theories suggest that CSA can have a long-term impact on survivor's sexual functioning and behavior, shaped by the trauma. This can occur due to the modification of a child's sexuality as a result of experiencing sexual abuse, as well as the traumatic experiences that become stored in the body and can impact an individual's sexual responses and behavior. Based on these theories, it is possible that traumatic sexuality in CSA survivors moderates the link between CSA and sexual outcomes.

Traumatic sexuality can be measured by a unique set of sexual patterns that refer to the distortions of the survivor's physical, cognitive, and emotional approach toward sex due to the sexual trauma. Six major factors of traumatic sexuality have been documented (Gewirtz-Meydan & Lassri, 2022): dissociation during sex, intrusiveness during sex, shame and guilt regarding sexual aspects, pleasing the other during sex, interpersonal distress, and hypervigilance during sex.

Various aspects of sexual contact, such as touch, nudity, flirting, oral or genital stimulation, any kind of penetration, might be experienced as triggering for survivors (Maltz, 1988; O'Driscoll & Flanagan, 2016; Staples et al., 2012) and lead to feelings of reexperiencing the past abuse, dissociation, and flashbacks during sex (Bird et al., 2014; Classen et al., 2001; Hansen et al., 2012; Rellini, 2008; Vaillancourt-Morel et al., 2016a, b). Intrusive memories, or flashbacks, may be experienced during sex(Buehler, 2008; Kristensen & Lau, 2011). Shame and guilt regarding sexual aspects echo the negative alterations in cognition (as part of PTSD symptoms) and might consist of individuals' negative beliefs regarding sex (e.g., "sex is harmful and disgusting") as well as about themselves (e.g., "I am unworthy of sexual pleasure") and about others (e.g., "he/she uses me as a sexual object") in the context of sexual interactions. By the same token, negative mood as part of PTSD could include intense negative emotional reactions toward sex, such as guilt and shame (Kilimnik & Meston, 2020), anxiety, fear, and disgust (Meston et al., 2006), all of which have been documented among CSA survivors.

People-pleasing can be a result of trauma and was recognized by Pete Walker (Walker, 2013) as the fourth type of trauma response, titled "fawn," alongside fight, flight, and freeze. According to Walker (2013), fawning is the use of people-pleasing to diffuse conflict, to feel more secure in relationships, and to earn the approval of others. Victims who use the fawning response are considered submissively codependent, sacrificing self-identity and healthy personal boundaries to sustain relationships or avoid rejection. This maladaptive way of creating safety in connections with others by essentially mirroring the imagined expectations and desires of other people can also be reflected in survivors' sexual lives. Pleasing the other during sex taps into the tendency toward other-directedness documented in victims of child abuse (Briere, 2011). Victims may be influenced by others, view their partners and their partners' needs as more important than their own needs, and direct their sex behaviors toward the partner without consideration of their own sexual needs and feelings.

As for interpersonal distress, it has been suggested in the research that perceptions of the other may be carried into adult sexual relationships and can be projected onto current sexual partners; survivors might even confuse their current partners with their abusers. Eventually, these representations of the other may prevent survivors from feeling safe and loved in their relationships, from allowing themselves to be vulnerable and emotionally intimate with their partners, and from being open about their emotional and sexual needs, all of which are essential elements in developing healthy intimacy. Hyperarousal PTSD symptoms may be expressed in feelings of extreme stress regarding each part of the sexual activity or in regard to any of the sexual partner's actions.

In summary, numerous studies have indicated that CSA is associated with sexual problems, yet other studies have found an absence of or weak links between CSA and sexual outcomes in adulthood (Rellini & Meston, 2007). Traumatic sexuality may exemplify the traumatic experiences that are unfolded within the sexual patterns of the survivor and as such may moderate the link between CSA and adult sexuality (e.g., sexual dysfunction, compulsive sexual behavior, and problematic pornography use). Examining the moderating role of traumatic sexuality may therefore shed light on the link between CSA and adult sexual problems.

## 1.3. The present study

In the current study we wished to expand the understanding of the association between CSA and sexual difficulties by examining traumatic sexuality as a potential moderator. The hypothesis of the study is that traumatic sexuality may play a moderating role in the relationship between CSA and sexual difficulties such as sexual dysfunction, sexual compulsive behavior, and problematic pornography use. The study aims to explore the moderating impact of various aspects of traumatic sexuality such as dissociation during sex, intrusiveness during sex, shame and guilt regarding sexual aspects, pleasing the other during sex, interpersonal distress, and hypervigilance during sex. The assumption that traumatic experiences of CSA survivors may be associated with symptoms such as traumatic sexuality, which may in turn contribute to the development of sexual difficulties, is based on existing literature that has demonstrated the relationship between trauma symptoms and sexual difficulties among survivors of CSA.

## 2. Method

## 2.1. Participants and procedure

We conducted an online survey of a convenience sample. Inclusion criteria were identifying as aged 18 or over, who could read Hebrew. Participants were recruited via social media (i.e., Facebook and Instagram). Adverts were used to invite participants to take part in a research study focused on childhood adversities and current romantic and intimate relationships. The survey was accessible through Qualtrics, a secure web-based survey data collection system. The survey took 25 min to complete, on average, and was open from November 2020 to November 2021. The survey was anonymous, and no data were collected that linked participants to recruitment sources. The ethics committee of the Univeristy of Haifa approved all procedures and instruments. Clicking on the link to the survey guided potential respondents to a page that provided information about the purpose of the study, the nature of the questions, and a consent form (i.e., the survey was voluntary; respondents could skip any questions or quit at any time; responses would be anonymous). The first page also offered researcher contact information. No incentives to participate were offered. At the conclusion of the study, participants were given access to various telephonic support hotlines and digital resources for mental health assistance, along with the researcher's contact details for further queries.

A total of 393 survivors of CSA participated in the study. Of them, 86 (22 %) were male, and 307 wore females (78 %). The average age of the participants was 31 years (SD = 6.19), with an age range of 24 to 41. More than half of participants were Jewish)61 %, n = 237), 119 (31 %) were Muslims and the rest were either Christian (n = 18, 4.6 %), and other (n = 14, 3.6 %). More than half of the sample are non-religious (n = 231, 59 %), and the rest identified as traditional (n = 122, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 122, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %) and the rest identified as traditional (n = 124, 31 %), religious (n = 33, 8.4 %), or other (n = 124, 31 %).

7, 1.8 %). More than half of the sample (n = 227, 57.3 %) held a university degree, and the rest had completed high school (n = 124, 32 %), had received various recognized educational/vocational certificates (n = 33, 8.4 %), or had not finished high school (n = 9, 2.3 %). The vast majority of participants (n = 233, 59.1 %) reported being in a relationship, and the rest were either single (n = 102, 26 %), divorced (n = 55, 14 %), or widowed (n = 3, 0.8 %). Of them, 284 (72 %) reported being in their relationship for over a year, and 109 (28 %) reported being in their relationship for less than a year. The majority of the sample, 93 % (n = 358) identified as heterosexual, and the rest identified as bisexual (n = 11, 2.9 %), gay (n = 12, 3.1 %), or other (n = 4, 1 %). Participants had an average of four sexual partners in their lifetime (ranged between two to nine). Finally, participants rated their health as good (n = 358, 93 %), rather good (n = 12, 3.1 %), poor (n = 11, 2.9 %), and very poor (n = 4, 1 %). In terms of representativity, our sample had a slight over-representation of Arabs (31 % compared to their share in the Israeli population, which is 25 %) and of non-religious individuals (54 % compared to Israel's general population, of which non-religious people comprise 45 % of the population) (Israel Central Bureau of Statistics, 2016). Our sample is highly educated but this is representative according to the OECD (OECD, 2021) report of 2020 in which 58 % of women in Israel at the age group of 25–34 is holding a tertiary qualification. It is anticipated that a higher proportion of females will be represented in the sample, given that CSA is more frequently reported by women (Gewirtz-Meydan & Finkelhor, 2020).

#### 2.2. Measures

A brief demographic questionnaire that assessed background variables such as gender, age, education, and relational status was filled out.

Childhood sexual abuse (CSA) was measured using the sexual abuse (SA) subscale of the Childhood Trauma Questionnaire (CTQ-SA; Bernstein et al., 2003). The CTQ is a 28-item scale developed to assess childhood physical, sexual, and emotional abuse, as well as physical and emotional neglect. The decision to focus on the SA subscale of the Childhood Trauma Questionnaire (CTQ-SA) in this study was in line with other studies that have investigated the specific effects of CSA on sexual difficulties (e.g., Dunlop et al., 2015; Staples et al., 2012) The decision was made due to a theoretical focus on the relationship between CSA and traumatized sexuality as a risk factor. The focus on CSA specifically, rather than other forms of childhood abuse and maltreatment, allows for a more targeted examination of the relationship in line with this theoretical framework. The CTQ-SA subscale consists of five items that specifically assess early childhood sexual abuse experiences. Responses to questions beginning "When you were growing up..." were reported on a 5-point Likert type scale, with higher numbers indicating greater perceived CSA severity (e.g., "I believed that I was sexually abuse"). In the current study, participants were classified as having a history of CSA if their score on the CTQ-SA (Bernstein et al., 2003) was higher than the cutoff of 6 suggested by Tietjen et al. (2010). Cronbach's alpha for the CTQ-SA subscale in the current study was good ( $\alpha = 0.87$ ).

Traumatic sexuality was measured using the post-traumatic sex scale (PT-SEX; A. Gewirtz-Meydan & Lassri, 2022). The PT-SEX is a self-report measure that assesses participants' traumatic reactions experienced during sex. The scale is composed of six factors: dissociation during sex (7 items; "During sex, my mind wanders and I can't focus on the sexual activity); intrusiveness during sex (5 items; "I am reminded of the perpetrator or the traumatic experience"); sex-related shame and guilt (5 items; "I don't feel ok for wanting to have sex"); pleasing the other in regard to sex (4 items; "I feel the need to fulfill my partner's sexual fantasies even when I am not interested in doing so"); interpersonal distress during sex (2 items; "I feel like I am angry at my partner during sex); and hypervigilance (2 items; "During sex, I need my partner to always tell me what is going to happen next"). The items within the factors are averaged, with higher scores indicating higher levels of traumatic sexuality. Participants were presented with the list of manifestations and items and were asked to indicate to what extent they experienced a specific reaction during sexual activity in the past six months on a scale from 1 (not at all) to 5 (very much). Internal consistency of the different factors was excellent for dissociation ( $\alpha = 0.93$ ) and intrusiveness ( $\alpha = 0.90$ ), good for shame and guilt ( $\alpha = 0.88$ ) and pleasing the other ( $\alpha = 0.86$ ) and acceptable for interpersonal distress ( $\alpha = 0.74$ ) and hypervigilance ( $\alpha = 0.73$ ).

Sexual dysfunction was measured by the Female Sexual Function Index (FSFI) (Katz & Marshall, 2003) and the International Index of Erectile Function (IIEF) (Rosen et al., 1997). The FSFI questionnaire includes 19 items to evaluate female sexual function, comprising six domains: sexual arousal, sexual desire, satisfaction, lubrication, orgasm, and pain during sexual activity. The answers to four of the questions are assigned 1–5 points, and the answers to the remaining 14 questions, 0–5 points. Additionally, each domain has its own impact on the calculation of the final score. The total FSFI score ranges between 2 and 36, with higher scores indicating more sexual dysfunction. In the current study, internal consistency for the scale was excellent ( $\alpha = 0.94$ ). The IIEF includes 15 items to evaluate men's sexual functioning over the previous four weeks in five domains: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Summed total scores range from 5 to 75, with higher scores indicating better sexual function. Cronbach's alpha for the current sample was good ( $\alpha = 0.80$ ).

Compulsive sexual behavior disorder (CSBD) was assessed using the CSBD-19 (Bothe et al., 2020). The CSBD-19 is a self-report measure that evaluates and assesses participants' sexual compulsivity (e.g., "Even though my sexual behavior was irresponsible or reckless, I found it difficult to stop"). The scale is composed of 19 items, each rated on a 5-point scale ranging from 0 (totally disagree) to 4 (totally agree). The items are summed to provide a total score, with higher scores indicating higher levels of compulsive sexual behavior. In the current study we found the internal consistency to be excellent ( $\alpha = 0.93$ ).

Pornography use was measured using the 5-item Brief Pornography Screener (BPS; Kraus et al., 2020). Participants are invited to report how often in the previous 6 months they experienced phenomena associated with problematic pornography use (e.g., "You have attempted to cut back or stop using pornography, but were unsuccessful") on a scale from 0 (*never*) to 2 (*very often*). The items are averaged, with higher scores indicating more problematic use of pornography. In the current study, internal consistency was excellent ( $\alpha = 0.95$ ).

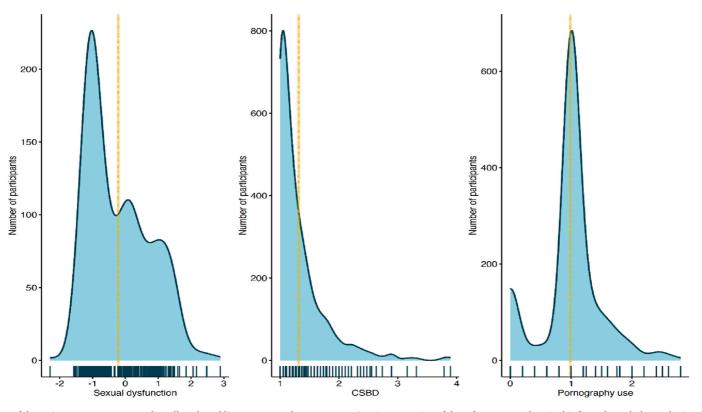


Fig. 1. Distribution of the main outcome measures. The yellow dotted line represents the mean score. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

## 2.3. Data analysis

The study comprised 393 participants with 2.47 % of the reported data missing. To handle missing data and to avoid the biases in analyzing complete cases only, we employed multiple imputation using the *mice* R package with 50 imputed datasets and the random forest algorithm. Plausibility of the imputation process was appraised visually by strip plots. Next, we examined normal distribution of the main study measures (CSA, CSBD, problematic pornography use, sexual dysfunction, and traumatic sexuality using PT-SEX factors – dissociation, intrusiveness, guilt and/or shame, pleasing behavior, fear, and hypervigilance) by the Shapiro-Wilk test, and the presence of outliers by robust median absolute deviation (MAD) tests. In addition, to appraise the effect of extreme values because of non-normality and/or the presence of outliers on regression-based analyses, we plotted studentized residuals over leverage scores to detect influential outliers (using the *ols\_plot\_resid\_lev* function of the *olsrr* R package). Given the detection of non-normality, outliers, and subsequently influential outliers (see Supplementary Fig. 1), main analyses were based on hierarchical robust regression analyses with the MM-estimator (using the *rlm* function of the MASS R package).

Specifically, we examined (i) whether CSA predicts sexual dysfunction, CSBD, and/or problematic pornography use in adulthood, and (ii) whether traumatic sexuality (Rubin, 2009) factors moderate the effect of CSA on sexual dysfunction, CSBD, and/or problematic pornography use. In the first step of the models, we introduced CSA and traumatic sexuality (PT-SEX factors) as predictors, and age and gender (0 = women, 1 = men) as covariates. To facilitate interpretation of the results and to avoid multicollinearity, CSA and PT-SEX factor scores were centered around their sample mean (multicollinearity was assessed by the  $ols_v vif_tol$  function of the  $ols_v vif_tol$  function of the olsr package). In the second step of the models, we added the interactions between CSA and PT-SEX factors. Reported main effects were taken from the first step of the models (given that the interactions bias the interpretation of main effects). Significant interactions were probed using simple slopes tests (using the *interactions* R package). All analyses were performed in R (R Core Team, 2020).

#### 3. Results

A descriptive representation of the main study outcomes of sexual functioning, CSBD, and pornography use are presented in Fig. 1. The score of sexual functioning ranged between -2.3 to 2.89 (M=-0.22, SD=0.95), of CSBD between 1 and 3.89 (M=1.31, SD=0.43), and pornography use between 0 and 2.8 (M=0.99, SD=0.51). The results of the models are presented in Tables 1 to 3.

#### 3.1. Effects of gender and age

The models indicated that the older the participants, the lower their sexual dysfunction. Men and women differed in all measures, such that women reported more sexual dysfunction and less CSBD and problematic pornography use than did men.

## 3.2. Main effects of CSA and PT-SEX factors

The models revealed that the greater the survivors' severity of CSA, the more frequent their problematic pornography use. Greater severity of dissociation during sex symptoms was linked with greater sexual dysfunction and higher CSBD. Finally, whereas greater intrusiveness during sex and pleasing the other during sex were linked with higher CSBD, experiencing higher sex-related guilt and/or shame and hypervigilance with regard to sex were associated with greater sexual dysfunction. Intrusiveness during sex was only

**Table 1**Hierarchical robust regression results for predicting sexual dysfunction by CSA as a function PT-SEX factors.

Predictors	Sexual dysfunction (Step 1)			Sexual dysfunction (Step 2)		
	b	95 % <i>b</i> CI	p	b	95 % <i>b</i> CI	p
(Intercept)	0.86	0.49-1.22	<0.001	0.81	0.44-1.18	< 0.001
CSA	0.02	-0.00 - 0.04	0.051	0.02	0.00-0.04	0.045
PT-SEX dissociation	0.24	0.09-0.39	0.001	0.23	0.08-0.39	0.003
PT-SEX intrusiveness	0.15	-0.02 - 0.32	0.075	0.20	0.02-0.39	0.034
PT-SEX guilt and/or shame	0.26	0.09-0.42	0.002	0.24	0.07-0.40	0.005
PT-SEX pleasing	-0.04	-0.15 - 0.08	0.523	-0.06	-0.18 - 0.05	0.297
PT-SEX fear	-0.02	-0.17 - 0.13	0.786	-0.04	-0.19 - 0.12	0.646
PT-SEX hypervigilance	-0.18	-0.31 to $-0.04$	0.010	-0.14	-0.28 to $-0.01$	0.036
Age	-0.01	-0.02 to $-0.01$	0.001	-0.01	-0.02 to $-0.00$	0.002
Gender (Women)	1.92	2.29-1.55	< 0.001	1.87	2.24-1.50	< 0.001
Abuse × Dissociation				0.00	-0.02 - 0.03	0.946
Abuse × Intrusiveness				-0.03	-0.06 to $-0.01$	0.011
Abuse × Guilt and/or Shame				0.02	-0.01 - 0.04	0.242
Abuse × Pleasing				0.03	0.00-0.05	0.020
Abuse $\times$ Fear				-0.01	-0.04 - 0.02	0.424
Abuse × Hypervigilance				-0.03	-0.06 to $-0.00$	0.036
Observations	393			393		
Pseudo-R <sup>2</sup>	0.08			0.18		

Bold values are significant.

**Table 2**Hierarchical robust regression results for predicting CSBD by CSA as a function PT-SEX factors.

Predictors	CSBD (Step 1)			CSBD (Step 2)		
	b	95 % <i>b</i> CI	p	b	95 % <i>b</i> CI	p
(Intercept)	1.30	1.21-1.38	<0.001	1.32	1.22-1.42	< 0.001
CSA	0.00	-0.00-0.01	0.319	0.01	0.00-0.01	0.010
PT-SEX dissociation	0.04	0.01-0.08	0.017	0.05	0.01-0.08	0.026
PT-SEX intrusiveness	-0.08	-0.12 to $-0.04$	< 0.001	-0.09	-0.14 to $-0.04$	0.001
PT-SEX guilt and/or shame	-0.02	-0.06 – 0.02	0.394	0.04	-0.01 - 0.08	0.108
PT-SEX pleasing	0.08	0.05-0.11	< 0.001	0.09	0.06-0.12	< 0.001
PT-SEX fear	0.01	-0.03 - 0.04	0.723	0.01	-0.03 - 0.05	0.561
PT-SEX hypervigilance	0.01	-0.02 - 0.05	0.453	0.01	-0.02 - 0.05	0.504
Age	-0.00	-0.00 – 0.00	0.516	-0.00	-0.00 – 0.00	0.506
Gender (Women)	-0.11	-0.17 to $-0.05$	< 0.001	-0.12	-0.18 to $-0.06$	< 0.001
Abuse × Dissociation				-0.00	-0.01 - 0.00	0.347
Abuse × Intrusiveness				0.01	0.01-0.02	< 0.001
Abuse × Guilt and/or Shame				0.01	0.01-0.02	< 0.001
Abuse × Pleasing				-0.00	-0.01 - 0.00	0.496
Abuse $\times$ Fear				-0.00	-0.01 - 0.01	0.940
Abuse × Hypervigilance				0.00	-0.01 - 0.01	0.703
Observations	393			393		
Pseudo-R <sup>2</sup>	0.04			0.30		

Bold values are significant.

**Table 3**Hierarchical robust regression results for predicting problematic pornography use by CSA as a function PT-SEX factors.

Predictors	Problematic pornography use (Step 1)			Problematic pornography use (Step 2)		
	b	95 % <i>b</i> CI	p	b	95 % <i>b</i> CI	p
(Intercept)	1.20	1.20-1.20	<0.001	1.15	1.08-1.23	<0.001
CSA	0.00	0.00-0.00	0.024	-0.00	-0.01 - 0.00	0.488
PT-SEX dissociation	-0.00	-0.00 - 0.00	0.857	-0.02	-0.05 – 0.01	0.286
PT-SEX intrusiveness	0.00	-0.00 - 0.00	0.589	-0.05	-0.09 to $-0.01$	0.007
PT-SEX guilt and/or shame	0.00	-0.00 - 0.00	0.574	0.01	-0.03 - 0.04	0.756
PT-SEX pleasing	-0.00	-0.00 - 0.00	0.408	-0.00	-0.03 – 0.02	0.887
PT-SEX fear	-0.00	-0.00 - 0.00	0.968	0.02	-0.01 - 0.05	0.170
PT-SEX hypervigilance	-0.00	-0.00 – 0.00	0.536	0.04	0.01-0.07	0.003
Age	-0.00	-0.00 - 0.00	0.138	-0.00	-0.00 – 0.00	0.879
Gender (Women)	-0.20	-0.20 to $-0.20$	< 0.001	-0.13	-0.17 to $-0.08$	< 0.001
Abuse × Dissociation				0.00	-0.00 – 0.01	0.862
Abuse × Intrusiveness				-0.01	-0.02 to $-0.01$	< 0.001
Abuse × Guilt and/or Shame				-0.00	-0.01 - 0.00	0.134
Abuse × Pleasing				-0.02	-0.02 to $-0.01$	< 0.001
Abuse $\times$ Fear				0.01	-0.00 – 0.01	0.066
Abuse × Hypervigilance				0.03	0.02-0.03	< 0.001
Observations	393			393		
Pseudo-R <sup>2</sup>	0.02			0.15		

Bold values are significant.

marginally associated with higher sexual dysfunction. Other main effects were not significant.

## 3.3. The moderating role of PT-SEX factors in the link between CSA and sex-related disorders

## 3.3.1. Sexual dysfunction

The model revealed two significant interactions between CSA and survivors' sexual dysfunction (see Fig. 2). Simple slopes tests indicated that whereas people high on intrusiveness during sex (M+1SD) had high sexual dysfunction regardless of the severity of their CSA (b=-0.001, SE=0.013, t=-0.11, p=.913), among people low on intrusiveness during sex (M-1SD), the greater the severity of CSA, the greater the sexual dysfunction (b=0.03, SE=0.016, t=2.13, p=.034). In addition, the tests indicated that only among people high in pleasing the other during sex (b=0.05, SE=0.016, t=2.88, p=.004) but not low (b=-0.01, SE=0.016, t=-0.85, p=.395), the greater the severity of CSA, the greater the sexual dysfunction.

## 3.3.2. Compulsive sexual behavior disorder

The model revealed two significant interactions between CSA and survivors' CSBD (see Fig. 3). Simple slopes tests indicated that among people with high intrusiveness during sex (b = 0.02, SE = 0.006, t = 3.65, p < .001) and/or sex-related guilt and/or shame (b = 0.03, SE = 0.006, t = 4.35, p < .001) but not among those low on these constructs (b = 0.01, SE = 0.007, t = 1.63, p = .104 for

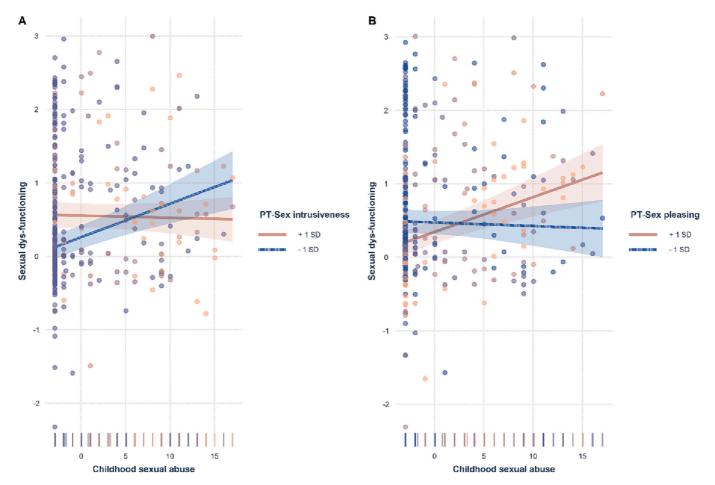


Fig. 2. Predicting sexual dysfunction by CSA as a function of the PT-SEX factors (intrusiveness in panel A, and pleasing in panel B).

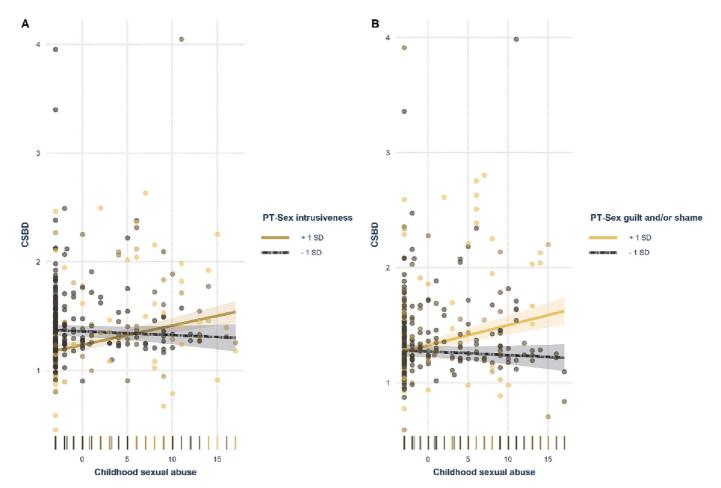


Fig. 3. Predicting CSBD by CSA as a function of the PT-SEX factors (intrusiveness in panel A, and guilt and/or shame in panel B).

intrusiveness during sex, and b = 0.003, SE = 0.006, t = 0.55, p = .583 for sex-related guilt and/or shame), the greater the severity of CSA, the greater the CSBD severity.

## 3.3.3. Problematic pornography use

The model revealed three significant interactions between CSA and survivors' problematic pornography use (see Fig. 4). Simple slopes tests indicated that only among survivors whose intrusiveness during sex (b = 0.008, SE = 0.001, t = 5.71, p < .001) and/or pleasing the other during sex were less severe (b = 0.004, SE = 0.001, t = 3.42, p < .001), and/or hypervigilance with regard to sex was more severe (b = 0.007, SE = 0.002, t = 4.87, p < .001), the greater the severity of CSA, the greater the problematic pornography use.

#### 4. Discussion

The goal of the current study was to examine the moderating role of traumatic sexuality (i.e., dissociation during sex, intrusiveness during sex, shame and guilt regarding sexual aspects, pleasing the other during sex, interpersonal distress, and hypervigilance during

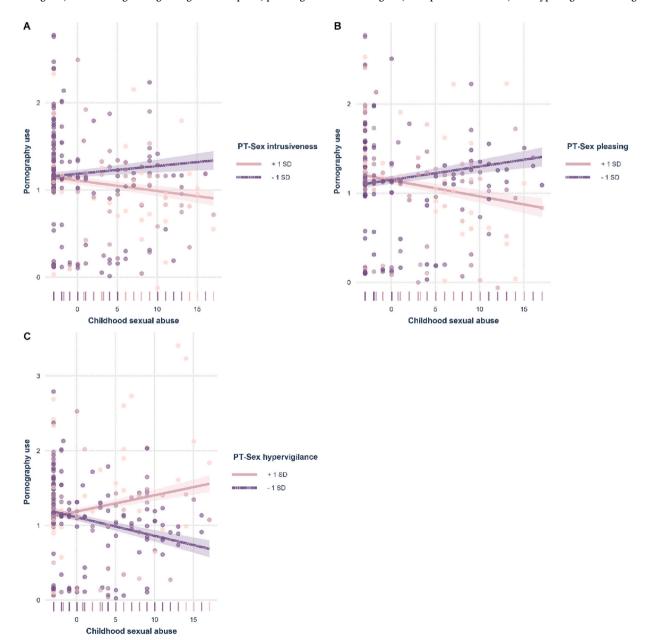


Fig. 4. Predicting problematic pornography use by CSA as a function of the PT-SEX factors (intrusiveness in panel A, pleasing in panel B, and hypervigilance in panel C.

sex) in the association between CSA and sexual difficulties. The sexual difficulties examined in the current study ranged from sexual dysfunction on one end of the spectrum to problematic pornography use and compulsive sexual behaviors on the other.

## 4.1. Traumatized sexuality and sexual dysfunction

Our models revealed that dissociation during sex, experiencing higher sex-related guilt and/or shame with regard to sex, and hypervigilance with regard to sex were directly associated with greater sexual dysfunction. Dissociation during sex can be described as survivors feeling "spaced out" or "shut-down" and unable to be present and connected to themselves and their partners during sex. They may also be unable to feel any sexual touch, due to numbness. Survivors of CSA are particularly prone to dissociation when having bodily sensations as their bodies were formerly used in the trauma and tended to become a source of suffering; it is thus reasonable to suggest that their former experiences push them to disconnect from their bodies (Scheffers et al., 2017). The finding that dissociation during sex has a direct effect on sexual dysfunction adds to findings from previous studies indicating that dissociation may inhibit arousal and orgasm (Bird et al., 2014; Hansen et al., 2012).

Shame and guilt with regard to sex are typically rooted in the internalized stigmatization of early sexualization (Finkelhor, 1987). When the self is organized around sexual stigmatization and shame (e.g., "I am bad for wanting sex," Gewirtz-Meydan & Ofir-Lavee, 2020), the activation of sexual arousal can elicit sexual shame leading the survivor to feel bad or "dirty" for wanting or enjoying sex, potentially resulting in sexual dysfunction (Pulverman et al., 2018). The finding that higher sex-related guilt and/or shame with regard to sex was directly associated with greater sexual dysfunction echoes the results of Pulverman and Meston (2019). In that study, sexual shame completely mediated the relationship between history of CSA and sexual function and explained this relationship better than did any other variable.

Hypervigilance during sex reflects tension and unease with anything unexpected during sexual activity (e.g., the need to anticipate every move during the sexual activity) and might limit the survivor's ability to focus on pleasant sensations. As such, hypervigilance has been found to be associated with more sexual dysfunction (Lorenz et al., 2012; Payne et al., 2005).

Various triggers can evoke intrusive memories during sex and activate a response as if the trauma were being relived in the present moment. Such triggers can generate an array of responses among survivors, from avoidance, numbness, and dissociation to anger and hostility toward partners (as early traumatic dynamics have been projected onto them). Thus, it is not surprising that in the current study survivors high on intrusiveness during sex reported high sexual dysfunction regardless of the severity of their CSA.

Among survivors high in pleasing the other during sex, the greater the severity of CSA, the greater the sexual dysfunction. Pleasing the other during sex represents the need to fulfill the partner's sexual needs, even when the survivor is not interested in doing so. This pattern is similar to the sexual motive of "partner approval," which is defined as the use of sex to please or appease one's partner (Cooper et al., 1998). However, in the current study, pleasing was not seen as a sexual motivation but rather as a reenactment of an early trauma response (fawning, as discussed in the Introduction; Walker, 2013) or as an interpersonal dynamic, which in a previous study was found to be associated with dissociation (Gewirtz-Meydan & Lahav, 2021). This finding supports results of previous studies demonstrating that partner approval sexual motivation is associated with increased sexual dysfunction (Impett et al., 2005; Muise et al., 2013; Watson et al., 2017) and that distraction during sex tends to manifest as worries about pleasing one's partner (Brotto et al., 2016). The altered identity of CSA survivors (Bigras et al., 2020; J. N. Briere, 1992) may also help explain this link. Childhood sexual abuse tends to lead to identity impairments that manifest through other-directedness and susceptibility to influence, where pleasing the other is rooted in internal feelings of emptiness and not being deserving of love, in addition to low self-knowledge (e.g., identification of one's sexual needs, desire, limits, frontiers), all of which are detrimental to healthy sexuality and may lead to increased sexual dysfunction (Bigras et al., 2020; Guyon et al., 2020).

#### 4.2. Traumatized sexuality and compulsive sexual behavior disorder

As for compulsive sexual behaviors, our models revealed that greater severity of dissociation during sex, intrusive memories of the abuse, and pleasing the other in sex were linked with greater CSBD. Compulsive sexual behavior may serve as a repetitive reenactment of the original sexual trauma (Schwartz & Galperin, 2002; Slavin et al., 2020). During childhood, dissociation may play a defensive role by protecting the child from being present during the trauma. However, when dissociation appears in adulthood with CSBD, it enables repetitive revisits to the early sexual trauma (Canivet et al., 2022). Based on their findings on CSA survivors' reactions to sexual scenarios, Canivet et al. (2022) proposed that the arousal reported by CSA survivors could reflect a psychological mechanism rooted in an attempt to regain control over their sexuality through repetitively finding pleasure in a sexual realm that was previously marked with trauma, a finding echoed by our results.

Intrusive memories of the abuse also had a direct effect on CSBD as well as a moderating role in the association between CSA and CSBD. It is possible that intrusive memories of the abuse that emerge during sex can manifest as an unconscious and repetitive attempt to replay the early abuse in an ineffective and tentative effort to increase control, understanding, and mastery (Schwartz & Galperin, 2002). Survivors may compulsively engage in sexual relationships whose dynamics are similar to those that typified the early relationship in which the abuse occurred; alternatively, they may fantasize over these dynamics in order to relive the past traumatic sexual abuse and thereby "correct" or repair it (Canivet et al., 2022).

In the current study, CSBD was also linked with pleasing the other during sex. Pleasing the other reflects perceptions formed during the abuse regarding love and closeness, such as the confusion between love and sex or the beliefs that love and closeness can only be achieved by offering sex in return (Gewirtz-Meydan & Ofir-Lavee, 2020; Roller et al., 2009). Engaging repetitively in sex to please the partner may provide a cover for sexual shame-related thoughts (Pulverman & Meston, 2019), such as "I am an unworthy sexual

partner" or "I am destroying our relationship by not wanting or engaging in sex."

Sex-related guilt and/or shame also moderated the association between severity of CSA and CSBD severity. Although guilt and shame with regard to sex can lead some survivors to refrain from any sexual arousal, they can also have the opposite effect. Engaging in compulsive sex can reinforce negative representations of the self (e.g., "I am bad," "I am only good for sex") rather than putting the blame on the abuser. In the case of high shame and guilt with regard to sex, compulsive sexual behavior can also function as self-punishment, punishment of the body, or an act of cleansing or purifying the self (Schwartz & Galperin, 2002).

## 4.3. Traumatized sexuality and problematic pornography use

Finally, our study is one of the first studies in which problematic pornography use among survivors of CSA was examined. Our models revealed that the more survivors reported severe CSA, the more they reported problematic pornography use. This finding is not surprising as problematic pornography use is often considered to be a manifestation of CSBD (Kafka, 2010), and the association between CSA and CSBD was previously established (Slavin et al., 2020). It is possible that the impersonal nature of pornography enables survivors to avoid their fears of closeness and intimacy. As survivors of CSA often suffer from an attachment trauma, they may prefer to engage in sex that does not involve an intimate connection (Vaillancourt-Morel et al., 2016a, b), Vaillancourt-Morel et al., (2016a, b) found that dating or cohabiting CSA survivors reported more compulsive sexuality, whereas the constraining social contract embedded in marriage and long-term exclusive commitment was related to sexual avoidance. These findings suggest that sexual relations may be intermingled with past violations of trust and increasingly prevalent intimacy issues, lessening the compulsive use of sexuality as a coping mechanism, potentially changing the meaning of sexual activities, and ultimately inhibiting sexual responses toward an intimate partner. Our results add to this suggestion the idea that problematic pornographic use might be a way to engage in sex while avoiding the establishment of an intimate connection - an act that might be difficult for survivors (Vaillancourt-Morel et al., 2016a, b). Engaging in sex with another person typically involves trusting them and allowing oneself to be vulnerable and exposed, whereas pornography can fulfill some sexual needs without requiring an emotional connection (Szymanski & Stewart-Richardson, 2014) and without the risk of getting hurt, rejected, or revictimized. Finally, it is also possible that excessive pornography use is a coping mechanism for survivors to release extreme tension built up from hypervigilance or to regulate difficult emotions.

In the current study, we identified three significant interactions between CSA and survivors' problematic pornography use, in which higher levels of intrusiveness during sex, pleasing the other during sex, and hypervigilance with regard to sex moderated the association between CSA severity and problematic pornography use. As the early sexual abuse was endured in the context of an interpersonal (often intimate and meaningful) relationship, engaging in sex with someone can be extremely triggering for survivors (Maltz, 2002; O'Driscoll & Flanagan, 2016; Staples et al., 2012). By avoiding any sexual contact, survivors can avoid sexual-related triggers. As such, pornography can seem to be a relatively "safe zone" in which survivors can achieve sexual release without the risk of being triggered. As for the findings about "pleasing the other," it is possible that survivors who develop a strong sense of themselves and are able to identify and assert their sexual needs within an intimate relationship may report a lower tendency toward pornography use. They may have found other ways to heal and prevent the reliving of early interpersonal dynamics (such as pleasing the other) that were involved in the CSA. Finally, the link between CSA severity and CSBD in survivors reporting higher hypervigilance during sex (e.g., the need for the survivor to know about any anticipated acts and moves of the partner during sex) may reflect the fact that pornography offers to the survivor a false sense of control (e.g., no one will touch me by surprise in an area that is uncomfortable for me). As research on the association between CSA and problematic pornography use during adulthood is scarce, the explanations we propose regarding the effect and moderation between CSA and problematic pornography use warrant further investigation and empirical support.

## 4.4. Limitations and future research directions

The implications of this study must be considered in light of its limitations. First, the representativeness of our sample and generalizability of our results may be limited by our convenience sample of participants recruited through advertisements on social medias where self-selection biases may occur. Future research should aim to explore the effects of CSA on sexual behaviors and problems in both clinical and non-clinical populations, and replicate the results in samples with diverse socioeconomic backgrounds in order to further expand our understanding of the issue. Studies would need to be performed each one targeting specific samples of CSA survivors (a large sample of victims identifying as men, as non-binaries, as queer, etc.), as each might need specific recruitment strategies and deserve well-tailored design. Second, the study's cross-sectional design also precludes causal conclusions, and further studies are needed to provide information on the course of sexual outcomes in the aftermath of CSA across the lifespan. Moreover, the use of retrospective self-reports may introduce typical biases, including underreporting, over-reporting, and recall issues. This limitation is especially relevant for items that address subjects such as CSA, hypersexuality, and sexual dysfunction, which are often considered intimate or taboo topics. Finally, research that has been conducted over the last decade has shown that survivors of CSA are often subjected to other types of maltreatment (e.g., physical and emotional victimization and neglect), a phenomenon known as "poly-victimization" (Finkelhor et al., 2011). In the present study we sought to examine the isolated effect of CSA; yet other forms of victimization and child adversities may have contributed to survivors' difficulties in the sexual domain. In the future, researchers should explore sexual difficulties in light of poly-victimization and include additional methods of data collection, such as clinical interviews. Further research is needed to delve into the relationship between specific PTSD symptoms and different types of sexual difficulties. The use of additional validated measures of trauma symptoms, such as dissociation, would enhance the accuracy of these studies, especially if they incorporate cutoff scores to accurately distinguish between clinical and non-clinical populations when examining the impact of PTSD symptoms and traumatized sexuality on various sexual difficulties. Finally, examining couples as well as

individuals may also offer a more comprehensive perspective on the impact of child sexual abuse on sexual behaviors and problems.

## 4.5. Clinical implications

In the current study, intrusiveness during sex was found to moderate all sexual difficulties examined (sexual dysfunction, CSBD, and problematic pornography use), and hypervigilance moderated the association between CSA and problematic pornography use. According to a review (Boyd et al., 2018), mindfulness-based therapies may be effective in increasing activity in prefrontal regions and reducing activity in limbic regions and thus may effectively target intrusion and hyperarousal symptoms. Thus, we suggest integrating mindfulness-based approaches when treating sexual difficulties among survivors of CSA. This recommendation is in line with findings from a recent review (Gewirtz-Meydan, 2020), indicating that mindfulness-based therapy (Brotto et al., 2012) is one of only two treatments that has been empirically validated for the treatment of sexual dysfunction among female survivors of CSA. Mindfulness may allow CSA survivors to cope with difficult emotions related to their sexual experiences with more flexibility and less rumination, suppression, or overidentification with them, thereby improving sexual response (Brotto et al., 2012; Godbout et al., 2020).

It's important to note that while secondary and tertiary interventions are important in addressing the aftermath of CSA, primary prevention is crucial in reducing the overall incidence of this form of abuse and reducing its impact on individuals, families, and communities. In light of our findings, it appears that primary prevention services such as public education activities and support programs could be valuable in promoting sexual health and well-being among CSA survivors. Additionally, our study highlights the potential for education to help survivors reflect on their sexual selves, including their needs, desires, and values, and to better understand themselves as sexual beings and partners. It is worth noting that survivors may benefit from experiencing their sexuality more authentically and detached from their previous traumatic experiences (Guyon et al., 2023). However, CSA-related effects, including traumatic sexuality, can be intertwined with painful emotions and flashbacks related to CSA, it is crucial to ground these interventions in a secure context guided by a trauma-sensitive approach (Gewirtz-Meydan, 2022; Gewirtz-Meydan & Ofir-Lavee, 2020; Godbout et al., 2020).

We also found that shame and guilt moderated the association between CSA and CSBD. Although negative self-judgment during sex is common among women in general (Brotto, 2013), it may be intensified among CSA survivors, who often experience high levels of self-criticism followed by feelings of failure, low self-worth, and self-blame, all of which may consequently derail their intimate relationships (Lassri et al., 2018). In this case, it might be beneficial to integrate more self-compassion-based interventions that focus on practicing more self-kindness; such interventions might contribute positively to the sexual domain (Ferreira et al., 2020; Santerre-Baillargeon et al., 2018).

Low levels of pleasing the other were related to lower sexual dysfunction and higher levels of problematic pornography use. Interventions should aim to enhance survivors' capacities to identify, understand, and express their sexual needs and feelings in an intentional and effective manner, consistent with their subjectivity, values, and priorities to promote healthy and satisfying sexuality. Our results suggest that interventions aiming to help such survivors develop a greater sense of self, acknowledge their sexual and relational preferences and boundaries, recognize their right to sexual pleasure, and increase their capacity to communicate their sexual needs and interests could potentially diminish or at least decrease sexual dysfunction and problematic pornography use. Conducted in the context of a welcoming, warm, and safe therapeutic relationship, a trauma-focused couple intervention could offer insights to the partners to increase the synchronicity and emotional attunement that was absent in the one partner's experience of CSA. It could also offer a reparative relational experience in which to re-experiment and discover a healthy sexual relationship free of violence.

## 5. Conclusion

The current study aimed to examine the relationship between traumatic sexuality and sexual difficulties in survivors of CSA. The results showed that dissociation during sex, shame and guilt regarding sexual aspects, and hypervigilance during sex were directly related to sexual dysfunction. The greater severity of dissociation during sex, intrusive memories of the abuse, and pleasing the other during sex were linked with greater CSBD. Intrusiveness during sex, pleasing the other during sex, and/or hypervigilance with regard to sex moderated the association between CSA and problematic pornography use. The study's results suggest that addressing traumatic sexuality is crucial to help survivors of CSA overcome sexual difficulties and lead healthier and fulfilling sexual lives. The findings emphasize the need for appropriate and trauma-informed interventions that target the specific issues related to the traumatic sexual experiences of survivors of CSA. Providing adequate treatment and support can help survivors of CSA address the long-term effects of trauma on their sexuality and improve their overall sexual functioning and behavior.

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## Declaration of competing interest

None.

## Data availability

Data will be made available on request.

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