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## Extradyadic Sexual Involvement and Sexual Compulsivity in Male and Female Sexual Abuse Survivors

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*We tested a mediation model in which the relationship between child sexual abuse (CSA) severity and extradyadic sexual involvement (ESI) is explained through sexual compulsivity. Participants were 669 adults currently involved in an intimate relationship who completed self-report questionnaires. Prevalence of ESI was 32% in women and 57% in men survivors, more than twice the rates among participants with no CSA history. Sexual compulsivity was significantly higher in participants with multiple extradyadic partners as compared to participants reporting only one extradyadic relationship, who nevertheless scored higher than participants reporting no extradyadic partner. The hypothesized structural equation model (SEM) was invariant across men and women and indicated CSA severity was positively and significantly associated with sexual compulsivity, which, in turn, predicted ESI. However, there was also a direct association between CSA and ESI. High CSA severity, directly and through high sexual compulsivity, led to the highest probability of ESI.*

Although the majority of women and men strongly value monogamy and disapprove of extramarital sexual behavior, 20% to 40% of men and 14% to 25% of women report having been sexually involved with someone other than their partner at least once in their lives (Allen & Atkins, 2012; Mark, Janssen, & Milhausen, 2011). Extradyadic sexual involvement (ESI) is traditionally defined as the act of having sexual intercourse with someone other than one's partner while being committed to an exclusive romantic

relationship (Glass & Wright, 1985). Although the unveiling of an infidelity episode occasionally has been associated with relationship improvement or enrichment (e.g., Olson, Russell, Higgins-Kessler, & Miller, 2002), it is generally conceptualized as an acute, potentially life-changing, situational stressor that predicts a variety of negative outcomes ranging from serious health issues (e.g., sexually transmitted infections [STIs], unwanted pregnancy) to chronic feelings of anger, betrayal, and humiliation, leading to anxiety or depressive disorders (e.g., Atkins, Marin, Lo, Klann, & Hahlweg, 2010; Gordon, Baucom, & Snyder, 2004; Hall & Fincham, 2009).

ESI also may trigger a diminution in relationship quality (e.g., declines in couple satisfaction; high-conflict and

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volatile interactions) and stability (e.g., repeated breakups and reconciliations, threats of divorce, and separation or divorce) (Mattingly, Wilson, Clark, Bequette, & Weidler, 2010). In addition, infidelity and accusations of infidelity is one of the leading causes of intimate partner violence and, in extreme cases, of husband–wife homicide (Buss & Duntley, 2014; Nemeth, Bonomi, Lee, & Ludwin, 2012). ESI remains one of the most often-stated reasons for union dissolution (Amato & Previti, 2003; Lampard, 2014) and is one of the main clinical challenges confronting specialists in couple therapy (Whisman, Dixon, & Johnson, 1997; Wilkinson, Littlebear, & Reed, 2012). The negative repercussions of such behavior are not restricted to adult partners but may spill over to family problems associated with children’s exposure to interparental difficulties and high-conflict divorce (Platt, Nalbone, Casanova, & Wetchler, 2008). Given the high prevalence and adverse consequences of ESI, it is important, for both clinicians and researchers, to identify and understand relevant developmental and proximal precursors (Christian-Herman, O’Leary, & Avery-Leaf, 2001).

A review of the theoretical, clinical, and empirical literature suggests that sexual infidelity is a dynamic, personal, interactional, and social process that requires a multilayered perspective (Allen et al., 2008; Baucom, Snyder, & Gordon, 2009; Maddox Shaw, Rhoades, Allen, Stanley, & Markman, 2013; Tsapelas, Fisher, & Aron, 2011). Sources of risk range from sociodemographic, neurobiological, and personality processes to interpersonal, cultural, and systemic factors. However, far less attention has been paid to developmental precursors of ESI. One potential antecedent, child sexual abuse (CSA), may be especially relevant, given its known impacts on subsequent sexual behavior and relational difficulties.

CSA is a commonly occurring phenomenon, and prevalence estimates range from 13% to 32% in women and between 5% to 14% in men (e.g., Briere & Elliott, 2003; Murray, Nguyen, & Cohen, 2014; Saunders & Adams, 2014). Negative sexual and relational outcomes are frequently related to abuse severity, which is typically assessed using three criteria: abuse frequency, intrusiveness of the act perpetrated, and relationship with the aggressor (Randolph & Reddy, 2006; Rellini & Meston, 2007). CSA that lasts for a longer duration, includes penetration, and involves a family member is associated with worse outcomes (Berthelot, Godbout, Hebert, Goulet, & Bergeron, 2014; Rellini & Meston, 2007; Watson & Halford, 2010). In children, CSA sometimes leads to increased or premature sex behavior—alone or with peers (Friedrich et al., 2001). Distorted sexual cognitions and premature sexual knowledge can, over adolescence, lead to maladaptive sexual decision making and outcomes: early age at first intercourse, a higher number of sexual partners, high-risk sexual behaviors, STIs, teen pregnancy, and early motherhood (Jones et al., 2013; Loeb et al., 2002; Trickett, Noll, & Putnam, 2011; Wilson & Widom, 2008).

This premature—and typically coerced or forced—exposure to sexuality through CSA may form a distinct

pathway to ESI in adolescence and adulthood. As in CSA, infidelity is frequently steeped in betrayal, fear, confusion, secrecy, guilt, shame, and transgression (Allen et al., 2005; Baucom et al., 2009). In adult CSA survivors, sexual desire and identity development may have become associated with emotional pain, harmful disloyalty, and rule breaking, which in turn can increase vulnerability to extradyadic sexual contacts. For example, contextual cues specific to typical extradyadic situations (e.g., a forbidden relationship with an unavailable and deceptive partner; sexual feelings accompanied by anxiety, guilt, and shame; Allen et al., 2005; Brand, Markey, Mills, & Hodges, 2007; Maddox Shaw et al., 2013) are thought to trigger unresolved past traumatic memories of CSA that, in turn, may lower protective boundaries against potentially harmful relationships. Unprocessed affect-laden memories of CSA, when chronically avoided or underregulated, might be dealt with by distracting sexual behaviors (Briere, 2002; Briere, Hodges, & Godbout, 2010) that play out in ESI.

Three large-scale empirical studies have examined the hypothesis that CSA is associated with a heightened risk of ESI (Colman & Widom, 2004; Frias, Brassard, & Shaver, 2014; Whisman & Snyder, 2007). In a longitudinal study of 1,179 individuals, Colman and Widom (2004) followed abused and neglected children and a matched comparison group over a 25-year period to document the long-term consequences of childhood victimization across a number of relationship outcomes. They observed that female CSA survivors were 3.5 times more likely to engage in extradyadic activities compared to women who had not experienced CSA. However, CSA was not a significant risk factor for men. Likewise, in a national survey of 4,884 American married women, Whisman and Snyder (2007) found that women with a history of CSA were four times more likely to report infidelity behaviors when compared to women without such a history. Finally, in a recent online survey including 807 women, Frias and colleagues (2014) demonstrated that extradyadic involvement was twice as likely among CSA survivors (22.1% versus 10.6% in nonvictims).

Information on CSA and ESI in men, however, is sparse and inconsistent. The single empirical study that included both genders revealed nonsignificant findings in men (Colman & Widom, 2004). Jacob and Veach (2005), however, provided qualitative evidence for a high rate of ESI in male CSA survivors. They interviewed 10 female partners of male survivors and discovered that half of the CSA survivors had been sexually involved with other partners (e.g., engaged in romantic affairs or anonymous one-night stands). Given that CSA has been consistently associated with extradyadic relations in women, and taking into account the few and inconsistent findings in men, there is a need for additional research to assess whether gender moderates the association between CSA and extradyadic involvement. Moreover, although the CSA–ESI association seems robust at least

in women, most CSA survivors do not become involved in extradyadic relations, suggesting that complex mediating or moderating mechanisms may underlie the vulnerability of some CSA survivors to extradyadic relations.

ESI, even if underresearched, seemingly fits within the network of adverse couple and sexual outcomes associated with CSA (Godbout, Briere, Sabourin, & Lussier, 2014; Miller, Schaefer, Renshaw, & Blais, 2013; Watson & Halford, 2010; Widom, Czaja, & Dutton, 2014). Recent reviews of the CSA literature suggest that sexual betrayal of a close partner may emerge as a result of overwhelming sexual compulsions developed in the context of past sexual trauma (Aaron, 2012; Colangelo & Keefe-Cooperman, 2012). Although this proposition remains untested within the context of CSA, sexual compulsivity has been conceptualized as a sexual coping mechanism designed to temporarily relieve intolerable inner tensions (Briere & Scott, 2014; Opitz, Tsytarev, & Froh, 2009; Perera, Reece, Monahan, Billingham, & Finn, 2009; Plant, Plant, & Miller, 2005). Repetitive or indiscriminant sexual behavior may address some CSA survivors' feelings of sexual inadequacy; fill a need for attention, validation, or love; or provide a sexual sense of power and control (Bergner, 2002; Price, 2003; Zapf, Greiner, & Carroll, 2008). In this context, ESI may serve as a way to temporarily escape, avoid, relieve, or neutralize distress via externalized sexual behaviors that provide excitement, connection, validation, and/or sexual pleasure. This sexual compulsivity mediation hypothesis is consistent with various trauma theoretical perspectives derived from cognitive-behavioral (Deblinger, Mannarino, Cohen, Runyon, & Heflin, 2015) and psychodynamic (Terr, 2003) viewpoints. For example, in the self-trauma (Briere, 2002) and the traumatogenic dynamics (Finkelhor & Browne, 1985) models, the concept of repetition compulsion refers directly or indirectly to sexual behaviors as a form of behavioral reenactment of CSA or a coping strategy developed to face the effects of childhood trauma.

In the absence of definitive literature, the possibility that sexual compulsivity may mediate the link between CSA and ESI should be explored. Although the present study focused on a sexual compulsivity mediation hypothesis, ESI might occur for a large number of motives (e.g., attachment insecurities, Frias et al., 2014; communication/problem-solving behaviors, Baucom et al., 2009). In addition, although sexual compulsivity has been found to be more prevalent and severe in men relative to women (Ballester-Arnal, Gómez-Martínez, Llarío, & Salmerón-Sánchez, 2013; Gullette & Lyons, 2005; Kaplan & Krueger, 2010), its association with CSA has been studied primarily in the former (Blain, Muench, Morgenstern, & Parsons, 2012; Parsons, Grov, & Golub, 2012). In light of research suggesting that CSA-related sexual compulsivity may be more specific to men than women, gender might moderate the strength of the associations among CSA, sexual compulsivity, and ESI.

## Objectives and Hypotheses of The Current Study

The overall goal of this study was to examine CSA severity as a potential long-term risk factor for ESI in women and men. The first aim was to use structural equation modeling (SEM) to test a mediation model whereby the relationship between CSA severity and ESI is explained through sexual compulsivity. The second aim was to test a gender moderation hypothesis within the proposed mediation model. Given the gender-specific findings reported in the literature, the invariance of SEM was examined to determine if the strength of the associations among CSA, sexual compulsivity, and ESI varied between men and women. Based on previous findings and theory, we hypothesized that CSA severity would be associated with higher sexual compulsivity, which in turn would lead to an increased probability of ESI (hypothesis 1); and that the association among CSA, sexual compulsivity, and ESI would be stronger for men than for women (hypothesis 2).

## Method

### Participants

Adult participants (i.e., above 18 years old) were eligible for this study if they were currently married or involved in a couple relationship, whether or not they cohabited with their partner (i.e., a noncohabiting form of romantic involvement is referred as "dating"). Of the 1,472 individuals who started the survey, 932 (63.3%) indicated being currently involved in a couple relationship. Of these, 669 (71.8%) provided usable data (i.e., completed the question on CSA and ESI). Thus, the final sample comprised 669 French-speaking Canadians aged between 18 and 77 years old ( $M = 27.56$ ,  $SD = 9.18$ ) and included 77.9% ( $n = 521$ ) women and 22.1% ( $n = 148$ ) men. Within this sample, 14.6% ( $n = 98$ ) were married, 51.4% ( $n = 344$ ) were unmarried and living with their partners, and 33.9% ( $n = 227$ ) reported being in a dating relationship and living separately. The average duration of the current relationship was 5.30 years ( $SD = 6.97$ ). Most of the respondents (85.8%,  $n = 574$ ) identified themselves as heterosexual, 27 reported being homosexual (4.0%), and 55 reported being bisexual (8.2%). A total of 41.7% ( $n = 279$ ) of the participants had a college degree, whereas 30.5% ( $n = 204$ ) had an undergraduate degree and 20.0% ( $n = 134$ ) had a graduate degree; 60.5% ( $n = 405$ ) were students and 37.1% ( $n = 248$ ) were full-time or part-time workers. Annual income varied significantly among participants, with 31.7% ( $n = 212$ ) reporting less than CAD\$10,000/year, 31.8% ( $n = 213$ ) between CAD\$10,000 and CAD\$30,000, 18.1% ( $n = 121$ ) between CAD\$30,000 and CAD\$50,000, and 17.9% ( $n = 120$ ) above CAD \$50,000. As compared to the 2011 national and regional population census (Institut de la statistique du Québec, 2014; Statistics Canada, 2012), the current sample included

a larger number of women (77.9% versus 50.3%), younger participants ( $Mage = 27.56$  years versus  $Mage = 41.5$ ), and individuals from a lower socioeconomic background (31.7% less than CAD\$10,000/year versus 13.34%, and 17.9% above CAD\$50,000 versus 25.09%).

### Measures and Variables

**CSA.** Based on the Criminal Code of Canada, CSA was defined as any sexual act between a child under 16 years of age and a person five or more years older, or in a position of authority, with or without the presence of physical force or violence and with or without the “consent” of the child. To assess the occurrence of CSA, a 12-item questionnaire, based on measures described by Mendel (1995), Finkelhor (1979), and Fromuth and Burkhart (1987), was developed for this online survey. This questionnaire evaluated if, before the age of 16, participants had any sexual experiences with one (or more) individual at least five years older or in a position of authority. To characterize potential abusers, 12 response choices were presented: 1 = *Natural or adoptive mother*, 2 = *Natural or adoptive father*, 3 = *Stepmother*, 4 = *Stepfather*, 5 = *Grandmother*, 6 = *Grandfather*, 7 = *Sister*, 8 = *Brother*, 9 = *Other family member*, 10 = *Family friend or acquaintance at least five years older*, 11 = *Teacher, babysitter, or instructor*, and 12 = *Stranger at least five years older*. To estimate the severity of CSA, participants who responded affirmatively to one or more of those 12 items were asked nine follow-up questions to describe their experience including age at first victimization, the frequency of abuse, and the act(s) perpetrated (e.g., complete vaginal or anal penetration, oral sex, touching).

CSA severity was operationalized in the SEM analyses through three characteristics of the victimization experience, used as indicators of a CSA latent variable: the frequency of abuse, the intrusiveness of the act perpetrated, and the relationship with the perpetrator. For the latent variable, these characteristics were coded so that a high score indicated a greater severity of CSA as suggested by the literature on these characteristics (Berthelot et al., 2014; Watson & Halford, 2010; Whisman, 2006). CSA frequency represented the number of times the abuse occurred and was coded as follows: 0 = *Nonvictim*, 1 = *One time*, 2 = *Two to five times*, to 3 = *More than five times*. The act perpetrated was coded according to the intrusiveness of the CSA: 0 = *Nonvictim*, 1 = *Without direct contact, i.e., voyeurism or exposure*, 2 = *Touching*, 3 = *Oral penetration*, 4 = *Anal or vaginal penetration*. Relationship with the abuser was coded according to the closeness to the abuser: 0 = *Nonvictim*, 1 = *Stranger*, 2 = *Known person*, 3 = *Family member*, 4 = *Parental figure*. For participants reporting multiple incidents of CSA, the most intrusive incident was coded. In the present sample, the alpha coefficient for these three CSA characteristics was .96.

**ESI.** ESI was defined as the action of having sexual intercourse with someone other than one’s actual partner

while being committed to a romantic relationship (Glass & Wright, 1985). This concept was operationalized on the basis of the participants’ response to the following question: “Excluding your actual partner, since the beginning of your current romantic relationship, with how many people have you had sexual intercourse?” Those who reported having sexual intercourse with one person or more were coded as having engaged in an extradyadic sexual relation; in other words, this variable was binary (0 = *No ESI*, 1 = *ESI*). This question also allowed us to assess the number of extradyadic partners and was coded as 0 = *No extradyadic partner*, 1 = *Single extradyadic partner*, and 2 = *Multiple extradyadic partners*. Participants who reported an ESI were asked a follow-up question to determine when their last sexual relation was with this person. The use of a self-reported question using neutral terms was suggested by Whisman and Snyder (2007) to promote disclosure of extradyadic sexual activities.

**Sexual Compulsivity.** To assess difficulties in managing sexual thoughts and behaviors, a French version of the Sexual Compulsivity Scale (Kalichman et al., 1994) was used. This scale includes 10 items assessing the extent to which participants agree to a series of statements related to sexually compulsive behaviors, sexual preoccupations, and sexually intrusive thoughts. Recent exploratory factor analyses indicated a two-factor solution, but in both studies only the total score was used (Ballester-Arnal et al., 2013; McBride, Reece, & Sanders, 2008). This questionnaire is rated on a 4-point Likert scale ranging from 1 = *Not at all like me* to 4 = *Very much like me*. The global score ranges from 10 to 40 and is computed by summing the items. A high score indicates high levels of sexual compulsivity. Sample items include “My sexual thoughts and behaviors are causing problems in my life” and “I sometimes fail to meet my commitments and responsibilities because of my sexual behaviors.” Past studies have suggested that a high score on this scale is associated with greater numbers of sexual partners, higher frequencies of masturbation, engaging in higher rates of sexual risk behaviors, and being recently diagnosed with multiple STIs in both men and women (Kalichman & Cain, 2004; Kalichman & Rompa, 2001). This scale has been reported to have good internal consistency and temporal stability (Kalichman & Rompa, 1995, 2001). In the present sample, the alpha coefficient for this measure was .86.

### Procedure

Men and women above 18 years old were recruited on a voluntary basis in the Canadian province of Quebec to participate in an online survey assessing the determinants of sexuality in adulthood. Advertisements informed participants that their participation would be anonymous; the survey could be completed in 45 to 60 minutes; and that it included questions on early sexual experiences, current

sexual behaviors, marital and extramarital relationships, and personal characteristics. Various methods were used to reach these participants: messages on social networks such as Facebook and Twitter, e-mails sent using the electronic mailing lists of university community members, and posters in various locations (e.g., stores, service centers, coffee shops, nonprofit community organizations, and support centers for victims of sexual assault). No compensation was offered for participating in the study. Interested participants were invited to click on a hyperlink, which led them to LimeSurvey, a secured Web site holding the online survey. Data were automatically collected in a secured and private database. All participants electronically signed a consent form to be enrolled in the study. The Institutional Review Board of Laval University approved this research.

**Statistical Analyses**

Data were first screened for outliers and to assess linearity, normality, and multicollinearity. Descriptive analyses were then conducted to examine the rates of CSA and ESI. Pearson’s correlations, chi-square analyses, and analyses of variance (ANOVAs) were performed to assess the relations among study variables. Descriptive, univariate, and correlational analyses were computed using SPSS 20. The main hypotheses were tested using SEM, with CSA severity as the predictor, sexual compulsivity as the mediator, and ESI as the outcome variable.

SEM is a statistical technique that estimates relationships among latent variables, minimizing the effects of measurement error (Kline, 2010). Between-gender differences were tested using a multiple group analysis. SEM were conducted using Mplus, version 7, with the weighted least squares mean- and variance-adjusted estimator (WLSMV). WLSMV does not assume normally distributed variables and is considered the optimum technique for modeling binary outcomes (Brown, 2006; Muthén & Muthén, 1998–2012). Because the relation with a nominal binary outcome (i.e., ESI) is nonlinear, the estimated probit coefficients were converted to probabilities to allow a more precise interpretation of the results (Brown, 2006; Muthén & Muthén, 2009). As a result, we computed probabilities of ESI for direct and indirect effects using formulas developed by Muthén and Muthén (2009): for the probability of direct effect,  $P(ESI = 1|\eta_2) = 1 - \Phi[(\tau - \lambda_2\eta_2) / \sqrt{\theta}]$  and for the probability of indirect effects,  $P(ESI = 1|\eta_2, \eta_1) = 1 - \Phi[(\tau - \lambda_1\eta_1 - \lambda_2\eta_2) / \sqrt{\theta}]$ .<sup>1</sup>

As recommended by McDonald and Ho (2002), overall model fit was tested by considering together the comparative fit index (CFI), the root mean square error of approximation (RMSEA), the chi-square statistic, and the ratio of

chi-square to degrees of freedom ( $X^2/df$ ). A combination of a non-statistically significant chi-square value, a CFI value of .90 or higher, a RMSEA value below .06, and a ratio of chi-square to degrees of freedom less than three are thought to represent a good fit (Kline, 2010; Ullman, 2001).

**Results**

**Descriptive Statistics**

**CSA.** In the present sample, 20.0% of women ( $n = 104$ ) and 18.9% of men ( $n = 28$ ) reported a sexual experience that satisfied the current criteria for CSA; this gender difference was not significantly different,  $\chi^2(1,669) = 0.08, p = .778$ , Cramer’s  $V = .01$ . The characteristics of sexual abuse, for women and men CSA survivors, are reported in Table 1.

**ESI.** In the present sample, 18.2% of women ( $n = 95$ ) and 31.8% of men ( $n = 47$ ) reported at least one extradyadic partner, and ESI was significantly more common in men than in women,  $\chi^2(1,669) = 12.61, p < .001$ , Cramer’s  $V = .14$ . The average number of extramarital partners was 2.12 ( $SD = 1.96$ ) in women and 4.11 ( $SD = 8.13$ ) in men. The latest episode of sexual infidelity had occurred more than one year ago in 51.6% of women ( $n = 49$ ) and 44.7% of men ( $n = 21$ ), and in the last year for 48.4% of women ( $n = 46$ ) and 51.1% of men ( $n = 24$ ).

**CSA, Sexual Compulsivity, and ESI: Univariate and Correlational Analyses**

Pearson’s correlations between all variables included in SEM are reported in Table 2. All of the indicators of CSA

**Table 1.** Characteristics of Sexual Abuse for CSA Survivors

Variables		Women CSA	
		% of 104 (n)	Men CSA % of 28 (n)
Age at first CSA		9.02 (3.42)	10.07 (3.46)
Frequency of CSA	1 time	21.2% (22)	25.0% (7)
	2 to 5 times	49.0% (51)	35.7% (10)
	More than 5 times	28.8% (30)	32.1% (9)
Relationship with the perpetrator	Stranger	8.7% (9)	14.3% (4)
	Known person	16.3% (17)	46.4% (13)
	Family member	76.0% (79)	71.4% (20)
	Parental figure	10.6% (11)	3.6% (1)
Act perpetrated	Without direct contact	49.0% (51)	67.9% (19)
	Touching	85.6% (89)	71.4% (20)
	Oral penetration	19.2% (20)	46.4% (13)
	Vaginal/anal penetration	11.5% (12)	35.7% (10)

Note. Means and standard deviations in parentheses for age at first CSA. Participants could report more than one perpetrator and more than one act perpetrated. CSA = childhood sexual abuse.

<sup>1</sup> Where  $\tau$  is the threshold of the model,  $\lambda_1$  is the regression coefficient between sexual compulsivity and ESI,  $\lambda_2$  is the regression coefficient between CSA severity and ESI,  $\eta_1$  is the value of sexual compulsivity latent factor,  $\eta_2$  is the value of CSA severity latent factor,  $\theta$  is the residual value of infidelity, and  $\Phi$  is the normal distribution function.

**Table 2.** Correlations Among CSA Severity, Sexual Compulsivity, and Extradynamic Involvement for Men and Women

Variables	1.	2.	3.	4.	5.
1. CSA: Frequency	—	.93***	.87***	.21*	.23**
2. CSA: Act perpetrated	.92***	—	.88**	.22*	.24**
3. CSA: Relation with the perpetrator	.92***	.89***	—	.25**	.25**
4. Sexual compulsivity	.14**	.15**	.12**	—	.14
5. Extradynamic involvement	.17***	.16***	.20***	.21***	—

Note. Correlations for women ( $N$  ranged between 498 and 521) are presented below the diagonal; correlations for men ( $N$  ranged between 134 and 148) are presented above the diagonal. CSA = childhood sexual abuse.

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

severity were significantly associated with sexual compulsivity and ESI for both men and women. Sexual compulsivity was positively associated with ESI for women but not men.

The prevalence of ESI, as well as means and standard deviations for sexual compulsivity in women and men, for both CSA survivors and participants without history of CSA are reported in Table 3. Chi-square analyses were used to test differences in infidelity for male versus female CSA survivors. Results revealed that both male and female CSA survivors reported significantly more ESI than men and women without a history of CSA, women:  $\chi^2(1,521) = 15.88, p < .001$ , Cramer's  $V = .18$ ; men:  $\chi^2(1,148) = 10.27, p = .001$ , Cramer's  $V = .26$ . Female CSA survivors reported 2.13 times more ESI than nonvictims, while this rate was 2.21 times greater for male survivors. Results of an ANOVA showed that men reported significantly more sexual compulsivity than women,  $F(1, 630) = 51.84, p < .001, \eta^2 = .08$ , and that CSA survivors reported significantly more sexual compulsivity than nonvictims,  $F(1, 630) = 20.48, p < .001, \eta^2 = .03$ . However, the effect of CSA history on sexual compulsivity did not significantly vary according to gender,  $F(1, 630) = 2.77, p = .097, \eta^2 = .004$ .

Additional univariate analyses were conducted using as a dependent variable the number of extradynamic partners reported: those without a history of any extradynamic partner, those with a single extradynamic partner, and those with

**Table 3.** Descriptive Statistics of Sexual Compulsivity and Extradynamic Involvement Among CSA and Non-CSA Survivors for Women and Men

Variables	Women		Men	
	No CSA ( $n = 402-417$ )	CSA ( $n = 97-104$ )	No CSA ( $n = 109-120$ )	CSA ( $n = 26-28$ )
Sexual compulsivity	14.05 (4.36)	15.78 (5.77)	17.40 (5.46)	21.15 (7.15)
Extradynamic involvement	14.9%	31.7%	25.8%	57.1%

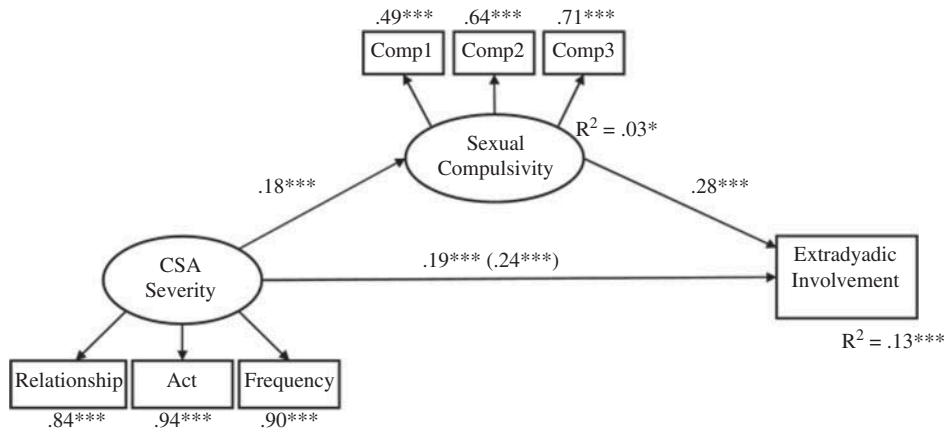
Note. Means and standard deviations in parentheses for sexual compulsivity. CSA = childhood sexual abuse.

multiple extradynamic partners. A chi-square analysis compared the frequency of CSA history among these three groups. Results revealed that participants with multiple extradynamic partners reported significantly more CSA ( $n = 23, 34.8\%$ ) than those who did not report having an extradynamic partner ( $n = 83, 15.7\%$ ),  $\chi^2(2, 669) = 24.86, p < .001$ , Cramer's  $V = .19$ . This difference was also significant between participants who reported a single extradynamic partner ( $n = 26, 34.2\%$ ) and those with no extradynamic partner, although CSA did not distinguish participants who reported multiple partners versus a single extradynamic partner. However, results of an ANOVA with post hoc comparisons indicated that participants with multiple extradynamic partners reported significantly more sexual compulsivity ( $n = 60, M = 19.07, SD = 6.79$ ) than those who mentioned a single extradynamic partner ( $n = 76, M = 16.16, SD = 5.80, p = .003$ ) or who did not report an extradynamic partner ( $n = 498, M = 14.57, SD = 4.69, p < .001$ ),  $F(2, 631) = 22.78, p < .001, \eta^2 = .07$ . Sexual compulsivity was also higher in participants with a single incident than in those who reported no extradynamic partner ( $p = .03$ ).

### The Medial Role of Sexual Compulsivity in the Relation Between CSA and ESI

To test the hypothesis that sexual compulsivity plays a mediational role between CSA and ESI, SEM was performed using CSA as a latent variable measured by three indicators; frequency of CSA, type of act perpetrated, and the relation with the perpetrator. To minimize measurement error, sexual compulsivity was operationalized as a latent variable rather than as a manifest continuous variable. However, to stabilize parameter estimates, reduce nonnormality, increase model efficiency to define the latent construct, and minimize the number of SEM indicators without loss of information, we opted for a subset-item-parcel approach: Items were aggregated into several parcels, and these parcels were used as indicators of the sexual compulsivity latent factor (Matsunaga, 2008). As recommended by Matsunaga (2008), using a correlational algorithm, the 10 items of the Sexual Compulsivity Scale were aggregated into three parcels. This approach was optimal because the homogeneity and unidimensionality of the Sexual Compulsivity Scale are well established. ESI was measured as a manifest dichotomous variable (i.e., 0 = no extradynamic relationship, 1 = at least one extradynamic relationship). The analysis of the measurement model showed that the two latent variables were well represented by their indicators or parcels with satisfactory fit indices:  $\chi^2(8) = 6.22, p = .623$ ; RMSEA = .00, 90% CI (.00 to .04); CFI = 1.00;  $\chi^2/df = 0.78$ . Standardized coefficients were all significant, ranging from .69 to .85 for compulsivity and from .93 to .98 for CSA severity.

Results of SEM showed that the proposed model fit the data well, with satisfactory fit indices:  $\chi^2(12) = 11.84, p = .458$ ; RMSEA = .00, 90% CI (.00 to .04); CFI = 1.00;  $\chi^2/df = 0.99$ . Figure 1 displays the standardized coefficients



**Figure 1.** Structural equation modeling of sexual compulsivity as mediator of the association between CSA severity and extradynamic involvement in the overall sample. The coefficient in parentheses indicates the association between CSA severity and extradynamic involvement before the inclusion of the mediator, sexual compulsivity. \* $p < .05$ ; \*\*\* $p < .001$ .

for the structural model, which indicate that CSA severity was positively and significantly associated with sexual compulsivity and ESI. In turn, sexual compulsivity significantly predicted ESI. Thus, CSA severity was found to affect ESI directly, as well as indirectly through sexual compulsivity. The association between CSA severity and ESI before the inclusion of the mediator, sexual compulsivity, was significant ( $\beta = .24$ ,  $SE = .05$ ,  $p < .001$ ) and explained 5.8% of the variance in ESI. When sexual compulsivity was entered in the model, the path between CSA severity and ESI was still significant but diminished ( $\beta = .19$ ,  $SE = .05$ ,  $p < .001$ ), indicating partial mediation. Overall, the model accounted for 13.1% of the variance for ESI and 3.2% of the variance for sexual compulsivity.

To allow a more precise interpretation of the SEM results, probabilities of ESI for direct and indirect effects were computed (Muthén & Muthén, 2009). For the direct effect of CSA severity on ESI, the probability of ESI for an average level of CSA severity (i.e., for the mean of the latent factor) was .20. This probability increased to .26 for a high level of CSA severity (i.e., at +1 standard deviation). For the indirect effect of CSA severity on ESI via sexual compulsivity, the probability of ESI for an average level of CSA severity and an average level of sexual compulsivity, using latent means, was .20. This probability increased to .29 when sexual compulsivity was high and to .36 if both CSA severity and sexual compulsivity were high (i.e., at +1 standard deviation). On the compulsivity scale, a score +1 standard deviation above the mean ( $M = 15.18$ ,  $SD = 5.23$ ) corresponded to a score of 20.41.

To examine the gender moderation hypothesis for the mediational model, a multiple-group, gender-invariance SEM analysis (Dimitrov, 2006) was conducted. SEM was first assessed simultaneously for women and men, allowing all paths to be estimated freely, to ensure that the model held for both genders. Results revealed a good-fitting multigender model:  $\chi^2(28) = 44.46$ ,  $p = .025$ ; RMSEA = .04, 90% CI (.02 to .06);

CFI = .97;  $\chi^2/df = 1.59$ . This SEM was then compared to a more restrictive model of gender invariance in which all paths are constrained to be equal across men and women. Models are compared using a chi-square difference test; a univariate incremental chi-square value probability smaller than 0.05 indicates evidence of differences across men and women. Results indicated a nonsignificant chi-square difference for the measurement model ( $\chi^2_{\text{difference}}(4) = 2.70$ ,  $p = .609$ ) and the mediational SEM ( $\chi^2_{\text{difference}}(3) = 4.32$ ,  $p = .229$ ), indicating that the SEM was equivalent across men and women.

Finally, we also conducted an additional SEM analysis controlling for sociodemographic variables, specifically participants' current age and length of present relationship, that could affect the generalizability and strength of the relationships between variables. Given the multicollinearity between these two variables ( $r = .77$ ), participants' age and length of the relationship were introduced individually as covariates in two different structural equation models. Adding participants' age as a covariate to the model did not change the significance or strength of the association between variables and resulted in satisfactory fit indices:  $\chi^2(16) = 18.03$ ,  $p = .322$ ; RMSEA = .01, 90% CI (.00 to .04); CFI = 1.00;  $\chi^2/df = 1.13$ . Replacing participants' age with length of the relationship as a covariate also resulted in satisfactory fit indices:  $\chi^2(16) = 17.60$ ,  $p = .348$ ; RMSEA = .01, 90% CI (.01 to .04); CFI = 1.00;  $\chi^2/df = 1.10$ . These additional analyses confirmed that the mediational model held independent of age and length of the relationship.

## Discussion

ESI within dating, cohabiting, and married couples is often an acute stressor, frequently grounded in a broad range of proximal precursors, including low commitment, poor intimacy, sexual dissatisfaction, poor communication, and problem-solving deficits (Allen et al., 2005; Allen et al.,



2008; Maddox Shaw et al., 2013; Tsapelas et al., 2011). The results of the present study clearly show that although ESI might be an existential decision rooted in moment-to-moment personal choices and experiences, it is also linked to early sexual trauma. In addition, as the frequency and the intrusiveness of sexual abuse is higher, and as the closeness of family ties to the aggressor is stronger, the risk of ESI increases. Thus, the severity of these sexual contacts predicts negative adult sexual outcomes, a finding that adds to the recent research literature on the detrimental effects of CSA in many aspects of adult intimate relationships (Senn & Carey, 2010; Stephenson, Pulverman, & Meston, 2014; Walsh, Latzman, & Latzman, 2014).

The prevalence of ESI within a current relationship was 32% and 57% for female and male survivors, respectively—rates that are more than twice as high as those observed in nonvictims. This is a significant finding, because it provides further evidence that CSA survivors are at significant risk for behaviors that threaten their ongoing dyadic involvement. For women, these results are consistent with the existing, albeit limited, literature (Colman & Widom, 2004; Frias et al., 2014; Whisman & Snyder, 2007). To our knowledge, however, this is the first study establishing that this also applies to male CSA survivors. The only other study examining ESI in men having experienced CSA, Colman and Widom (2004), reported nonsignificant findings. It should be noted, however, that Colman and Widom (2004) focused solely on court-substantiated cases of CSA, whereas in fact a substantial proportion of CSA is not reported to authorities (MacMillan, Jamieson, & Walsh, 2003). In addition, their analyses were restricted to married participants, and extradyadic involvement was stringently defined as sexual intercourse with a minimum of three different individuals other than their partner. Although further studies are needed to replicate the current results, our findings indicate that the CSA–ESI association is generalizable to both women and men. However, the base rate of CSA is generally higher in women than in men, whereas, for ESI, this ratio is reversed, with men being almost twice as likely to engage in ESI than women. The current results indicate that a history of CSA increases the risk of ESI in a similar manner in men and women, directly and through higher sexual compulsivity. Future research is indicated to further explore the predictors of this reversal in the proportion of women and men reporting CSA and ESI, including a greater tendency for men, as compared to women, to under-identify as CSA survivors (Holmes, 2008) and yet to be more likely to use ESI as a coping mechanism to relieve distress (Tsapelas et al., 2011).

The association between CSA and ESI is consistent not only with several studies but also with theoretical models developed to account for the short- and long-term effects of CSA. These different explanations—couched in the language of *traumatogenic dynamics* (Finkelhor & Browne, 1985), *self-trauma disturbance* (Briere, 2002), or *repetition compulsion* (Terr, 2003)—all point to abuse-related difficulties in affect regulation, trust, and relational power dynamics

that might undermine adult sexuality. Whether ESI is conceptualized as a coping strategy designed to reduce painful affects or as a form of behavioral reenactment of CSA, these models directly or indirectly highlight sexual preoccupations or behaviors that are, to some extent, fueled by feelings of vulnerability, powerlessness, betrayal, or rejection.

CSA was found in the present study to be associated with adult sexual compulsions and behaviors that, in turn, predicted ESI. In this regard, CSA appears to affect extradyadic involvement directly, as well as indirectly through sexual compulsivity. These data also indicate that individuals reporting more severe CSA report higher sexual compulsivity, both of which increased the likelihood of infidelity.

Bergner (2002) has hypothesized that sexually compulsive individuals are obsessed with the enactment of specific sexual scenarios that have their origins in early experiences of degradation, such as CSA. These scenarios are thought to occur within the couple relationship but also in extradyadic involvements. In this way, sexually compulsive behaviors may represent an attempt to recover from past traumatic sexual experiences, such as CSA, by repeatedly engaging in sexual behaviors in a variety of contexts (Briere, 2002). When they are pursued through extradyadic contacts, these recovery attempts are typically maladaptive and distress producing, because they are conducted in a highly charged affective context, suffused with ambivalence, insecurity, betrayal, and mistrust. In this regard, CSA may set up a dysregulating cycle producing increasingly more negative outcomes (Bergner, 2002; Briere & Scott, 2014; Terr, 2003).

Although past studies indicate that sexual compulsivity is a common coping mechanism primarily for male survivors of CSA (Opitz et al., 2009; Plant et al., 2005; Perera et al., 2009), the mediation model presented here was invariant across women and men. This finding supports a gender similarity hypothesis, whereby most of the long-term repercussions of CSA converge for both men and women (Dube et al., 2005; Maikovich-Fong & Jaffee, 2010). In the present study, however, although the structural relations among CSA, sexual compulsivity, and ESI did not differ across gender, mean differences revealed that, as compared to women, men reported more sexually compulsive thoughts and behaviors. These differences may partly explain why the risk of ESI is generally twice as high in men as in women.

In addition to its mediation by sexual compulsivity, there was a direct pathway from CSA to ESI in the present study. This finding suggests that sexual compulsion per se does not capture the totality of the relationship between CSA and ESI and that other mechanisms (e.g., attachment insecurities; Frias et al., 2014) potentially contribute to variations in sexual behaviors outside the couple relationship. This is not surprising, given that sexual behaviors have multiple determinants (Dewitte, 2014) and that CSA is a distal risk factor of ESI, whereas other theoretical frameworks have proposed a wide range of more proximal sources of risk, such as low sexual or couple satisfaction, negative or high conflict communication, and insecurities about sexual self

(Allen et al., 2005; Allen et al., 2008; Maddox Shaw et al., 2013; Tsapelas et al., 2011) that were not included in the model tested here.

Interpretation of the present findings should be tempered by the consideration of certain potential limitations. Our SEM results are cross-sectional and therefore cannot be considered proof of causality. ESI may also fuel sexual compulsivity, and thus the association between these two phenomena may be bidirectional. Further, the ordering of variables in the present study was based on clinical and theoretical arguments and should be confirmed in longitudinal studies. Moreover, the representativeness of our sample is limited by a number of factors, including the use of a convenience sample recruited through an online survey with more women than men. Thus, the reported prevalence rates reported here may not completely mirror those found in the general population. Additional variables, such as sexual orientation, socioeconomic status, and the degree to which dyadic relationships contained a sexual exclusiveness agreement, were not taken into account in the mediational model. Future studies are needed to replicate the present results with different populations and in different settings. Regarding sexual exclusivity, for example, future research might examine the association between CSA and extradyadic behaviors in openly nonexclusive relationships compared to monogamous relationships, although such research would require large samples given the low prevalence of consensual nonmonogamous relationships in the general population (Rubin, Moors, Matsick, Ziegler, & Conley, 2014).

In addition, this investigation was based on retrospective self-reports that may introduce biases or distortions in the recall of CSA and underreporting of infidelity. However, the prevalence rates of CSA and ESI in men and women in the present study are similar to those observed in the general population (Allen & Atkins, 2012; Briere & Elliott, 2003; Mark et al., 2011), potentially supporting the validity and generalization of the current results.

Finally, although the present study examined the mediating role of sexual compulsivity and the moderator role of gender, and controlled for the age of the participant and length of the relationship, it is likely that the relationship between CSA and ESI is even more complex. Future investigators should consider other proximal (e.g., relationship quality, communication skills, current life stressors) and distal (e.g., other childhood trauma, parental extradyadic involvement) risk factors for ESI. Gender differences may emerge only over time, and their relative contribution would be best identified in longitudinal studies. Moreover, although this study represents an advance in the examination of the mechanism linking CSA and ESI, it did not use a dyadic statistical approach in which risk factors for both partners are considered simultaneously, testing for within-couple actor and partner effects (Kenny, Kashy, & Cook, 2006). The use of this or other complex statistical approaches in future research may more fully capture the interpersonal dynamics of sexuality (Dewitte, 2014).

The current results have implications for practitioners. The pathway through which CSA is associated with ESI suggests the value of therapeutic activities that address the mechanisms whereby childhood sexual victimization contributes to sexual compulsivity and ESI. Among these are interventions that focus on abuse-related relational schema, affect dysregulation that drives involvement in maladaptive behaviors, insecure attachment, and conditioned emotional responses to early sexual memories and cues (e.g., Briere, 1996; Cloitre et al., 2011; Courtois, 2010), as well as, when possible, couples-focused therapy wherein both partners are helped to understand and address ESI and sexual compulsivity as, at least in part, potential effects of sexual abuse.

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