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Avoidant and compulsive sexual behaviors in male and female survivors of childhood sexual abuse☆

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ABSTRACT

The main objectives of this study were to test a theory-based mediation model in which the relation between childhood sexual abuse (CSA) and dyadic adjustment is mediated through adult sexual avoidance and sexual compulsivity and to examine the gender-invariance of this model. A sample of 686 adults currently involved in a close relationship completed online self-report computerized questionnaires. Prevalence of CSA was 20% in women and 19% in men. In line with our hypotheses, path analyses and structural equation analyses showed that, for both women and men, CSA was associated with more sexual avoidance and sexual compulsivity, which, in turn, predicted lower couple adjustment. Overall, these findings suggest that both avoidant and compulsive sexuality are relevant intervention targets with couples in which one or both partners are CSA survivors.

Introduction

Child sexual abuse (CSA) survivors form a heterogeneous population and it is now well-established that the short- and long-term course of these experiences vary according to personal/familial pre-traumatic vulnerabilities, the nature and severity of the abuse and the quality of familial, social and professional support offered to the survivors (e.g., Godbout, Briere, Lussier, & Sabourin, 2014; Hébert, 2011; Liang, Williams, & Siegel, 2006; Watson & Halford, 2010). In their landmark longitudinal study, Trickett, Noll, and Putnam (2011) also pointed out that, in some cases, symptoms emerge more clearly over time, at critical periods of development. For CSA survivors, the formation of a cohabiting or married relationship may represent such a critical period where romantic attachment, intimacy, and sexual issues coincide to create certain challenges during young and middle adulthood. The current scientific literature suggests that many adult CSA survivors have difficulty forming close relationships and report more instability in these relationships as well as poorer dyadic adjustment (DiLillo & Long, 1999; Larson, Newell, Holman, & Feinauer, 2007; Liang et al., 2006; Miller, Schaefer, Renshaw, & Blais, 2013; Whisman, 2006), more severe domestic violence (Whitfield, Anda, Dube, & Felitti, 2003; Widom, Czaja, & Dutton, 2014), and elevated rates of relationship dissolution (Colman & Widom, 2004; Watson & Halford, 2010; Whisman, 2006). When present, these

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long-term negative repercussions of CSA have been explained through chronic and dysfunctional self- and partner-schemas characterized by confusion, fear, shame, self-denigration, feelings of emptiness, deep mistrust, aggressiveness, etc. (Briere & Runtz, 1993; Finkelhor & Browne, 1985).

Romantic relationship difficulties experienced by CSA survivors need further exploration since the clinical picture in adulthood is complex and evolving across time within relationships. Some studies have revealed that the magnitude of the association between CSA and relationship maladjustment is small and sometimes non-significant, indicating that many CSA survivors develop satisfying romantic relationships as adults (Berthelot, Godbout, Hébert, Goulet, & Bergeron, 2014; DiLillo, Lewis, & Loreto-Colgan, 2007; Larsen, Sandberg, Harper, & Bean, 2011; Nelson & Wampler, 2000; Watson & Halford, 2010). These studies have demonstrated that the association between CSA and relationship adjustment is probably indirect and mediated by key variables playing a role in the development of these long-term consequences.

Because CSA has consistently been related to a variety of negative sexual attitudes and behaviors emerging in middle-childhood (e.g., intrusive or inappropriate sexual behaviors; e.g., Friedrich et al., 2001; Trickett et al., 2011) and in adolescence (e.g., early age at first intercourse, a high number of sexual partners, high-risk sexual behaviors, teenage pregnancy and early motherhood; e.g., Loeb et al., 2002), it is not surprising that researchers are beginning to notice that CSA is related to adverse sexual health outcomes in adult intimate relationships. For example, CSA predicts multiple aspects of sexual functioning, including low frequency of intercourse (Dennerstein, Guthrie, & Alford, 2004), or inversely heightened sexuality (Wilson & Widom, 2008), negative sexual attitudes (DiLillo et al., 2007), sexual dissatisfaction (Rellini & Meston, 2007), lower sexual self-esteem, higher sexual concerns, heightened risk of sexual revictimization (Van Bruggen, Runtz, & Kadlec, 2006), self-reported infidelity (Colman & Widom, 2004; Frias et al., 2014), and a vast array of sexual dysfunctions (Najman, Dunne, Purdie, Boyle, & Coxeter, 2005). The rigorous examination of adult sexual sequelae is important because it has been suggested that they may specifically distinguish CSA survivors from victims of other types of childhood trauma (Blain, Muench, Morgenstern, & Parsons, 2012).

Although various studies have reported an association between CSA and negative sexual health outcomes, most researchers have focused on sexual difficulties as an outcome of CSA or as a component of relationship difficulties rather than as a potential mediator of the association between CSA and dyadic adjustment. However, in their review, Christopher and Sprecher (2000) reported several studies focusing on intimate relationships who have demonstrated that sexuality in marriage or in dating relationships is positively related to several indicators of relationship satisfaction. Indeed, because sexuality is an integral component of intimate relationships, it is not surprising that unsatisfactory, conflictual, dysfunctional or non-existent sexuality has a powerful impact on marital quality and can threaten marital viability and stability (McCarthy, 2003; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006). Building on previous research suggesting a consistent association between CSA and negative sexual health outcomes, an indirect link between CSA and couple adjustment, and finally, a positive relation between sexuality and couple satisfaction, the general goal of this study was to test a theory-based mediation model in which the relation between CSA and dyadic adjustment is mediated by adult sexual behaviors.

Aaron (2012), as well as Colangelo and Keefe-Cooperman (2012), systematically reviewed the literature on CSA and adult sexual functioning and independently concluded that the disparate outcomes can be organized into two competing pathways. The first path goes from CSA to internalized sexual symptoms characterized by avoidance, either caused by abuse flashbacks, aversion, dissociation during intercourse, negative feelings and dysfunctions. The second path indicates that CSA may lead to the development of externalized, compulsive sexual behaviors and is also referred to as hypersexuality or addictive sexuality. Aaron (2012) asserted that avoidance may be women's typical long-term sexual response to CSA whereas in men, sexual compulsivity would be the normative reaction.

The empirical basis for these theoretically hypothesized gender-differences is at best weak. Most studies of sexual compulsivity have been conducted exclusively on men (Blain et al., 2012; Forouzan & Van Gijseghem, 2005; Parsons, Grov, & Golub, 2012). For example, in a large sample of men who have sex with men, Parsons et al. (2012) observed that men showing sexual compulsivity were twice as likely as other men to have experienced CSA. In a study sampling both women and men, Skegg, Nada-Raja, Dickson, and Paul (2010) revealed that the association between CSA and sexual compulsivity was significant for men but not for women. However, in a large representative sample of UK women and men, Plant, Plant, and Miller (2005), reported that CSA predicted addictive sexual activities in both men and women. This small pool of studies points to inconsistent gender-specific outcomes in the relation between CSA and sexual compulsivity, supporting the need to scrutinize this relationship.

The association between CSA and sexual avoidance has also received little empirical attention and the evidence for gender differences is mixed. In a study of 272 women survivors of CSA, Lemieux and Byers (2008) found that women who have experienced sexual penetration or attempted sexual penetration were more likely to have both purposely abstained from sexual activity and more frequently engaged in casual or unprotected sex. Likewise, while studying a sample consisting of 65 male CSA survivors, Forouzan and Van Gijseghem (2005) reported sexual fears as well as compulsive masturbation. Finally, McCallum, Peterson, and Mueller (2012) showed that CSA was associated with sexual avoidance in men recruited in a sexually transmitted disease clinic but not in an online survey. Again, there is no conclusive evidence that women experience more sexual avoidance than men. On the contrary, it can be argued that the sexual avoidance and sexual compulsive pathways proposed by Aaron (2012) and Colangelo and Keefe-Cooperman (2012) to explain the longitudinal course of CSA may not be exclusionary but co-occur with sexual distress symptoms in both women and men survivors. Whereas such a proposition may appear counterintuitive or paradoxical, sexual ambivalence, fueled by both sexual pathways (i.e., compulsion to engage

in sexual activity while believing sex is bad), has been reported in adolescent female incest victims (Noll, Trickett, & Putnam, 2003).

Although these findings are interesting, they originate from a relatively small number of empirical studies, conducted with undersized samples of adults, and lumping participants together regardless of their marital status (single or in a couple relationship). In addition, direct gender comparisons are rare because many studies examining relational and sexual outcomes of CSA in adult survivors have sampled only women (e.g., Lemieux & Byers, 2008; Liang et al., 2006), small samples of men (e.g., Blain et al., 2012; Forouzan & Van Gijseghem, 2005) or have included both but in ways that precluded gender comparisons (e.g., Berthelot et al., 2014).

To summarize, the specific nature of the association between CSA and couple adjustment remains undetermined and very few studies have integrated sexuality and dyadic adjustment with CSA into a coherent model (Davis & Petretic-Jackson, 2000; Whiffen & Oliver, 2004). To our knowledge, only one study has examined the effect of sexual functioning in the intimate relationship on couple satisfaction in CSA survivors. In their large-scale longitudinal study of 202 randomly selected newlywed couples, DiLillo et al. (2009) examined a range of marital domains assessed three times over a two-year period and evaluated possible proximal intervening variables such as sexuality and trauma symptoms. This study revealed several relevant results including a much stronger link between maltreatment and marital outcome for men compared to women and the pervasive impact of CSA on physical aggression in the current relationship. This study also suggested that the relationship between CSA severity and marital satisfaction over time was not mediated by the frequency of sexual activities (DiLillo et al., 2009). However, several factors may account for this non-significant finding and underline the need to test direct or indirect associations between CSA, sexuality and dyadic adjustment. For example, the elimination of couples who divorced during the study (many of whom had sexual abuse histories), a sample with limited severity of CSA (i.e., rarely included forced sexual intercourse), and the sample choice of newlywed couples may all have weakened expected linkages. Studies allowing a full examination of couples having a wider range of couple difficulties associated with more severe CSA and longer duration of relationships are needed. Moreover, sexuality was examined with a two-item measure assessing frequency of sexual activities and sexual satisfaction. Thus, the hypothesis that the sexual outcomes of CSA are mostly observable through inhibition and compulsiveness could not be examined.

The Current Study

Based on previous research, the overall goal of this study was to test a theory-based mediation model in which the relation between CSA and dyadic adjustment is mediated through adult sexual behaviors in a sample of men and women currently involved in a close relationship. In the current study, we conducted path analyses and Structural Equation Modeling (SEM) to formally evaluated the theory-based hypothesis that CSA leads to increased adult sexual avoidance and sexual compulsivity, which in turn are negatively related to adult dyadic adjustment. We performed SEM to examine the role of CSA severity in our mediation model. In addition, to test Aaron's (2012) differential pathways hypothesis across gender, the gender-invariance of our mediation model was examined.

Method

Procedure

A convenience sample of French-Canadian men and women over the age of 18 was recruited to participate in an online study assessing the determinants of sexuality. Participants were recruited on a voluntary basis through various methods; messages on social networks such as Facebook and Twitter, a Facebook fan page, the researcher's university's electronic list that contains administrative, student, and staff listings, and posters in various locations (e.g., coffee shops, support centers for victims of sexual assault). Interested participants accessed a hyperlink, which led them to an anonymous survey hosted by a secured website: LimeSurvey, where they electronically signed a consent form. There was no compensation for their participation in the study, which was approved by our University's Institutional Review Board.

Participants

Adult participants (i.e., above 18 years old) were eligible for this study if they were currently involved in a married, cohabiting or dating relationship. Of the 932 eligible participants who started the survey, 75% ($n = 702$) provided usable data: i.e., completed the question on CSA and at least one of the three outcome questionnaires. We excluded five participants whose answers appeared invalid; they responded with the same answer to all of the survey items. In 11 cases, the age between the respondent and partner made it difficult to assess the age difference and thus as it was not possible to accurately code the participant's experience as CSA or not, these cases ($n = 11$) were excluded. Thus, the final sample consisted of 686 participants. No significant differences were observed in the socio-demographic characteristics (i.e., age, education, occupation, annual income, sexual orientation, marital status) of participants in the final sample and participants who were removed, with the exception of gender $X^2(1) = 13.69$, $p < .001$; there was a higher proportion of men in the excluded group (35%, $n = 86$) compared to the proportion in the final sample (23%, $n = 157$). The majority of those male participants were excluded because they

started the survey but did not complete the key variables (i.e., they dropped out before completing the questions on CSA and at least one of the three outcome questionnaires).

All participants were French-speaking Canadians, 77% ($n = 529$) were women and 23% ($n = 157$) were men. The age of participants ranged from 18 to 77 years ($M = 27.51$, $SD = 9.24$). Most participants had a college degree (42%, $n = 287$), and others had an undergraduate (30%, $n = 207$) or a graduate degree (20%, $n = 135$); 61% ($n = 416$) were currently students, and 37% ($n = 253$) were employed full- or part-time. Concerning annual income, 32% ($n = 216$) of participants reported less than CAD$ 10,000/year, 32% ($n = 220$) between CAD$10,000 and CAD$30,000, 18% ($n = 122$) between CAD$30,000 and CAD$50,000 and 18% ($n = 123$) reported an income above CAD$50,000. Most participants identified themselves as heterosexual (86%, $n = 587$), 4% ($n = 30$) reported being homosexual and 8% ($n = 55$) reported being bisexual. The average duration of the current relationship was 5.24 years ($SD = 6.91$); 14% ($n = 99$) were married, 86% ($n = 351$) were cohabiting, and 34% ($n = 236$) were dating without living together.

Measures

All measures were administered as a self-report computerized questionnaire. Participants completed a sociodemographic questionnaire, with questions about sex, age, marital status, sexual orientation, education, occupation, and annual income.

Childhood sexual abuse. 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 measure evaluated if, when they were a child (before 16 years old), participants had a sexual experience with one (or more) individuals who were at least five years older or in a position of authority or an adult stranger. Participants who responded affirmatively to one of those items were classified as having experienced CSA and were asked to describe their experience with nine follow-up questions on the characteristics of the sexual experience. Follow-up questions referred to the participant's age at the first abuse, the frequency of abuse, the sex of the perpetrator and the act(s) perpetrated (e.g., complete penetration, oral sex, touching). Because CSA survivors, especially men, are sometimes reluctant to admit being victimized or may not label their sexual experience as a CSA, by interpreting this experience as consensual or a sexual initiation (Weiss, 2010), we used neutral terms such as sexual experiences.

In the path analyses, CSA was a dichotomous observed variable coded according to the presence or absence of a CSA history; 0 (no-CSA) and 1 (CSA). In the SEM analyses, CSA severity was operationalized by three characteristics of the sexual experience which were used as indicators of a latent factor: the chronicity of abuse, the type of act perpetrated, and the relationship with the perpetrator. These characteristics were coded so that a high score indicated a greater severity of the abuse as suggested by current literature considering these characteristics (Watson & Halford, 2010; Whisman, 2006). Chronicity of abuse represented the number of times the abuse occurred and was coded from 0 (nonvictim), 1 (one time), 2 (two to five times), to 3 (more than five times). Type of act perpetrated was coded according to the intrusiveness of the CSA and varied from 0 (nonvictim), 1 (without direct contact, i.e., voyeurism or exposure), 2 (touching), 3 (oral sex), to 4 (anal or vaginal penetration). Relationship with the abuser was coded according to the closeness to the abuser and varied from 0 (nonvictim), 1 (stranger), 2 (known person), 3 (family member), to 4 (parental figure). For participants reporting multiple abusive experiences, the most intrusive incident was coded.

Sexually avoidance behaviors. A French version of the sexual avoidance subscale (Katz, Gipson, & Turner, 1992) of the Sexual Aversion Scale (Katz, Gipson, Kearl, & Kriskovich, 1989) was used to assess avoidant behaviors relating to sexual contact. This subscale includes 10 items on a four-point Likert-type scale ranging from one (not at all like me) to four (very much like me). Items are summed to obtain a total score ranging from 10 to 40, where a high score corresponds to a greater tendency to avoid sexual activity. Sample items include "I am afraid to engage in sexual intercourse with another person" and "I try to avoid situations where I might get involved sexually". This subscale demonstrated good psychometric qualities in previous studies (e.g., Cronbach's alpha of .87 in La Rocque & Cioe, 2011). Past studies also suggested satisfactory construct validity, indicating for example that sexual avoidance, worry and low sexual desire were separate but related constructs (Katz & Jardine, 1999). Finally, test–retest reliability over a one-month period was high ($r = .90$; Katz et al., 1989). In the current study, Cronbach's alpha for the sexual avoidance subscale is .82.

Sexually compulsive behaviors. A French version of the Sexual Compulsivity Scale (Kalichman et al., 1994) was used to assess difficulties to manage sexual thoughts and behaviors. 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. This scale is rated on a four-point Likert scale ranging from one (not at all like me) to four (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. There is no validated clinical cut-off score for this scale. However, there is some agreement in the scientific literature that individuals scoring above 24 demonstrate severe problems related to sexual compulsivity (Hook, Hook, Davis, Worthington, & Penberthy, 2010). Sample items include "My sexual thoughts and behaviors are causing problems in my life" and "I sometimes fail to meet my commitments because of my sexual behaviors". The scale has demonstrated good internal consistency (e.g., Cronbach's alpha ranging between .87 and .92, Kalichman & Rompa, 1995; Kalichman & Rompa,

2001). Temporal stability over a 3-month interval demonstrated acceptable reliability (r_{xy} = .80). In the present sample, the alpha coefficient is .86.

Couple adjustment. A shortened four-item French-Canadian version (Sabourin, Valois, & Lussier, 2005) of the Dyadic Adjustment Scale (DAS; Spanier, 1976, translated in French by Baillargeon, Dubois, & Marineau, 1986) was used to assess relationship quality. The DAS-4 was constructed from items from the satisfaction factor of the 32-item scale (Sabourin et al., 2005). The first three items of the DAS-4, rated on a six-point Likert scale ranging from zero (never) to five (always), are "How often have you considered divorce, separation, or terminating your relationship?", "In general, how often do you think that things between you and your partner are going well?", and "Do you confide in your mate?". The fourth item, a general indicator of relationship happiness, is scaled on a seven-point Likert scale, ranging from zero (extremely unhappy) to six (perfectly happy); participants are asked to indicate the answer which best describes the degree of happiness experienced in their relationship. Global scores on the DAS-4 range from zero to 21, with higher scores reflecting a higher level of relationship quality. Generally, a score of 13 represents the clinical cut-off used to differentiate clinically significant couple distress individuals from those satisfied with their relationship (Sabourin et al., 2005). The shortened version of the DAS was used because it has the advantage of being less time consuming than the DAS-32, yet provides comparable information on couple satisfaction. Non-parametric item response analysis of 8,000 participants has demonstrated that the DAS-4 effectively predicts couple dissolution, and is less contaminated by socially desirable responding than the 32-item version. Internal consistency, predictive validity and temporal stability of the DAS-4 have been demonstrated and are similar to the reliability and validity of the 32-item scale (Sabourin et al., 2005). In the present study, Cronbach's alpha is .80.

Statistical Analyses

Data were first screened for outliers and to assess linearity, normality, and multicollinearity. The data distribution of both mediating variables exhibited non-normality features (i.e., sexual compulsivity: skew = 1.58 and kurtosis = 2.89; sexual avoidance: skew = 3.26 and kurtosis = 14.94). Due to non-normality, a logarithm transformation was performed on sexual compulsivity scores (after transformation: skew = 0.83 and kurtosis = 0.36) and a reciprocal transformation was performed on sexual avoidance scores (after transformation: skew = 1.35 and kurtosis = 1.24) (Tabachnick & Fidell, 2003). Subsequently, descriptive analyses were conducted to examine rates and severity of CSA. Correlations, univariate *t*-tests, analysis of variance, and a chi-square test were performed to assess the relation between study variables. The main hypotheses were tested using path analyses, with the effects of CSA as the predictor, sexual behaviors as mediators, and dyadic adjustment as the outcome variable. Path analysis is a statistical technique that allows testing both direct and indirect relationships among different variables or latent variables that may be correlated (Kline, 2010). Between-gender differences were tested using a multiple group analysis. Descriptive statistics were computed using SPSS 20 and path analyses were conducted using Mplus, version 7 (Muthén & Muthén, 1998–2012). Mplus accounts for missing data using the full information maximum likelihood estimation (Muthén & Muthén, 1998–2012). 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) and the chi-square statistic. A nonstatistically significant chi-square value, a CFI value of .90 or higher, and a RMSEA value below .06 are indicators of good fit. Since chi-square tests are sensitive to sample size (Kline, 2010), we also used the ratio of chi-square to degrees of freedom (X^2/df). Values less than five indicate a satisfactory fit but a more severe cut-off value of three is ideal (Ullman, 2001).

Results

Descriptive Statistics

In the present sample, 20% (n = 104) of women and 19% (n = 29) of men reported a sexual experience that satisfied the current criteria for CSA. The average age of participants when the first abusive incident occurred was 9.01 years (SD = 3.41) for women and 10.14 years (SD = 3.42) for men. Concerning the chronicity of CSA, 21% (n = 22) of women and 28% (n = 8) of men reported being abused once, 49% (n = 51) of women and 35% (n = 10) of men reported being abuse two to five times, and 29% (n = 30) of women and 31% (n = 9) of men reported being abused more than five times. Most of the sexually abused participants were abused by a family member who was not a parental figure (women: 74%, n = 77; men: 69%, n = 20). However, among women and men, respectively, the following CSA perpetrators were reported: 11% (n = 11) and 3% (n = 1) a parental figure, 9% (n = 9) and 17% (n = 5) a known person, and 7% (n = 7) and 10% (n = 3) a stranger. Finally, concerning the act perpetrated, women mostly reported sexual fondling or touching (67%, n = 70) whereas 13% (n = 13) reported oral sex and 12% (n = 12) reported sexual intercourse with penetration. Among male survivors, 21% (n = 6) endorsed sexual fondling or touching, 28% (n = 8) reported oral sex, and 35% (n = 10) reported sexual intercourse with penetration.

CSA, Sexual Behaviors, and Couple Adjustment: Univariate and Correlational Analyses

Means and standard deviations for sexual behaviors and couple adjustment in women and men with and without a CSA history are reported in Table 1, which also includes correlations among CSA, sexual behaviors, and couple adjustment.

Table 1
Descriptive statistics and bivariate correlations among CSA, sexual behaviors, and couple adjustment for women and men.

Variable	Women		Men		CSA		No-CSA		1.	2.	3.	4.
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*				
1. CSA	–	–	–	–	–	–	–	–	–	.14**	.13**	−.09*
2. Sexual compulsivity	14.39	4.68	18.41***	6.08	16.99	6.47	14.83***	4.88	.23**	–	.09*	−.15**
3. Sexual avoidance	11.98	3.23	12.04	3.94	13.00	4.52	11.76**	3.04	.19*	.21*	–	−.19**
4. Couple adjustment	16.16	3.06	15.74	3.05	15.46	3.13	16.24**	3.03	−.15	−.18*	−.22**	–

Note: Correlations for women (*N* ranged between 507 and 522) are presented above the diagonal, and correlations for men (*N* ranged between 142 and 153) are presented below the diagonal.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

There were no significant differences between men and women for CSA rates ($\chi^2(1) = .07$, $p = .79$), sexual avoidance behaviors ($t(650) = -.20$, $p = .84$, $\eta^2 < .001$), and couple adjustment ($t(648) = 1.46$, $p = .14$, $\eta^2 = .003$). However, when compared to women, men reported more sexual compulsivity ($t(649) = -7.34$, $p < .001$, $\eta^2 = .10$). When compared to participants without a history of CSA, CSA survivors showed more sexual compulsivity ($t(638) = -3.50$, $p = .001$, $\eta^2 = .03$), sexual avoidance ($t(639) = -2.90$, $p = .004$, $\eta^2 = .02$), and lower couple adjustment ($t(637) = 2.56$, $p = .01$, $\eta^2 = .01$). Based on available cut-off scores for each scale, 5% ($n = 25$) of women and 19% ($n = 29$) of men reported a severe rate of sexual compulsivity while 16% ($n = 85$) of women and 18% ($n = 28$) of men reported clinically significant couple distress. For both men and women, CSA was positively associated with sexual avoidance and compulsivity. Because of the small number of sexually abused men in the sample, CSA was significantly correlated with dyadic adjustment only for women, even though the correlation was stronger in men than in women. For both women and men, sexually avoidant and compulsive behaviors were related to lower couple adjustment. In both genders, sexual avoidance was positively associated with sexual compulsivity. However, the correlations were generally small.

To examine the theoretically hypothesized gender differences in the aftermath of CSA (Aaron, 2012), univariate *t*-tests between women and men CSA survivors were conducted. There were no significant differences between men and women CSA survivors for sexual avoidance behaviors ($t(122) = -.53$, $p = .60$, $\eta^2 = .002$) and couple adjustment ($t(123) = 1.21$, $p = .23$, $\eta^2 = .012$). However, when compared to women CSA survivors ($M = 15.78$, $SD = 5.77$), men CSA survivors ($M = 21.33$, $SD = 7.08$) reported more sexual compulsivity ($t(122) = -4.20$ $p < .001$, $\eta^2 = .13$).

Exploratory and Confirmatory Factor Analyses of the Sexual Avoidance and Sexual Compulsivity Scales

The mediation model assessed in the present study is based on the hypothesis that sexual avoidance and compulsivity are two distinct constructs with minimal overlap. Thus, the structural validity of these concepts was tested using both exploratory and confirmatory factor analysis. The 20 items of the Sexual Avoidance and Sexual Compulsivity Scales were entered in a principal component analysis with promax rotation and correlated factors. This analysis confirmed the presence of two separate components (eigenvalues of 4.90 and 3.93), explaining 44% of the variance, each item being predominately related with its conceptual scale (saturation coefficients ranged from .55 to .80 for sexual compulsivity, and from .48 to .73 for sexual avoidance), and no items had cross-loadings of more than .30. There was a small but non-significant correlation between sexual avoidance and compulsivity ($r = .09$). The results of a confirmatory factory analysis also confirmed that this correlated two-factor model produced an acceptable fit to the data ($\chi^2(169) = 403.59$, $p < .001$; RMSEA = .05, 90% CI (.04–.05); CFI = .96; $X^2/df = 2.39$). The path between each item and its respective factor was significant; the correlation between the two latent factors was .12 (see Fig. 1). The proportion of variance explained by each item was significant, ranging from 35% to 85%.

The Mediational Role of Sexual Avoidance and Compulsivity in the Relation between CSA and Couple Adjustment

The main hypothesis of the present study was that, in women and men, sexual avoidance and sexual compulsivity play a mediational role between CSA and couple adjustment. Because past empirical studies did not conclusively show that CSA mainly produces sexual avoidance in women and sexual compulsivity in men, our mediational model also examined this gender moderation assumption. Thus, a multiple-group path analysis (Dimitrov, 2006) was conducted to test the gender-invariance of this mediational model. The configural model was first assessed simultaneously for both women and men, allowing all paths to be estimated freely to ensure that it is a well-fitting model. This configural model also provided a comparison base when examining the more restrictive model of gender invariance. Results indicated good fit for the configural model: $\chi^2(2) = 5.31$, $p = .07$; RMSEA = .06, 90% CI (.00–.14); CFI = .94; $X^2/df = 2.65$. We then constrained all paths in the path analysis model to be equal across gender. This restricted model also fit the data well: $\chi^2(7) = 7.99$, $p = .33$; RMSEA = .02, 90% CI (.00–.07); CFI = .98; $X^2/df = 1.14$. We then compared these models using a corrected chi-square difference test (Satorra–Bentler scaled chi-square; Satorra & Bentler, 2001) to determine whether gender moderated the association between CSA, sexual behaviors, and couple adjustment. The difference in the chi-square values for the

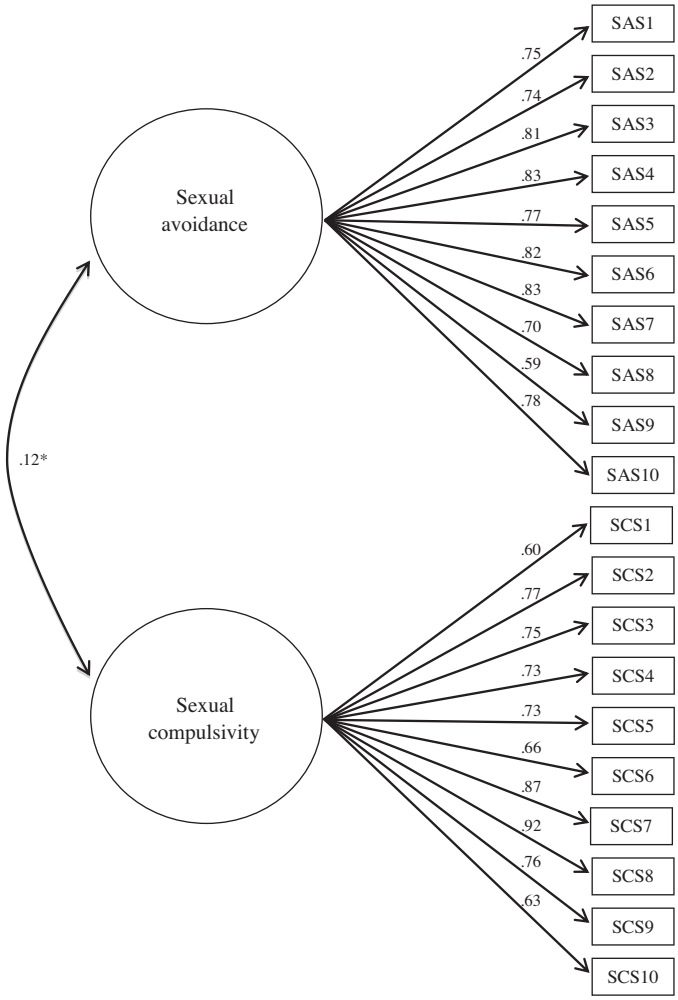

Fig. 1. Confirmatory factor analysis of the sexual avoidance and sexual compulsivity scales. *Note*: $^{*}p < .05$. All other paths are significant at $p < .001$.

configural and restricted models was not significant, $\chi^2_{\text{difference}}(5) = 1.76$, $p = .88$, indicating that the model held across gender.

Because the model was gender-invariant, only the final restricted model with standardized coefficients is presented in Fig. 2. The final model indicates that CSA was positively and significantly associated to both sexual compulsivity and sexual avoidance. In turn, sexual compulsivity and sexual avoidance significantly predicted lower dyadic adjustment. Finally, when sexual compulsivity and avoidance were entered in the model, the path between CSA and dyadic adjustment became non-significant ($\beta = -.14$, $SE = .10$, $p = .18$), indicating full mediation. Indeed, the association between CSA and dyadic adjustment before the inclusion of mediators was significant ($\beta = -.25$, $SE = .10$, $p = .01$), explaining 1% of the variance in dyadic adjustment. We used the bootstrap confidence intervals method to examine the magnitude and significance of the indirect effects

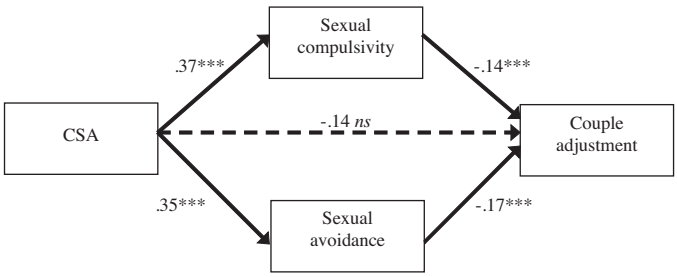

Fig. 2. Restricted path analysis model of sexual behaviors as mediators of the association between CSA and subsequent couple adjustment. *Note*: CSA was coded 0 = no-CSA, 1 = CSA, ns = non-significant, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

(Shrout & Bolger, 2002). This showed that the indirect effects through sexual compulsivity ($b = -.06$, 95% CI $-.11$ to $-.02$) and sexual avoidance ($b = -.06$, 95% CI $-.14$ to $-.02$) are significant. Overall, CSA and sexual behaviors accounted for 5% of the variance in dyadic adjustment for women and 6% for men. For women, CSA accounted for 3% of the variance in sexual compulsivity and 2% of the variance in sexual avoidance. For men, CSA accounted for 2% of the variance in sexual compulsivity and 2% of the variance in sexual avoidance. To confirm the generalizability of the mediational model and examine if these results hold when we control for sociodemographic variables that could affect the strength of the relations between variables, we conducted additional analyses, controlling for the age of the participant and length of the relationship. Given the strong correlation between these two control variables ($r = .75$), and to prevent multicollinearity, only participants' age was introduced as a covariable because it was the one most strongly correlated to the three outcomes variables, sexual compulsivity, sexual avoidance and couple adjustment. Adding this variable to the mediational model did not change the significance and strength of the associations between variables. This additional analysis confirmed that the mediational model held independently of age and length of the relationship.

To examine the role of CSA severity and confirm the validity of the mediational model, Structural Equation Modeling (SEM) was performed. This statistical technique estimates relationships among latent variables, minimizing the effects of measurement error (Kline, 2010). The latent factor for CSA severity was represented by three indicators (chronicity of CSA, type of act perpetrated, relation with the perpetrator) whereas for couple adjustment, it was formed through four indicators (i.e., the four items of the DAS-4). To minimize the number of SEM indicators, we measured the latent factors for sexual compulsivity and sexual avoidance by grouping items into six indicators (three for sexual compulsivity and three for sexual avoidance). The analysis of the measurement model showed that each latent variable was well represented by its indicators.

The SEM model showed satisfactory fit indices: $\chi^2(59) = 92.96$, $p = .003$; RMSEA = .03, 90% CI (.02–.04); CFI = .99; $X^2/df = 1.58$. The standardized SEM model produced results similar to those of the final restricted path analysis model. The results indicate that CSA severity latent variable was positively and significantly associated to both sexual compulsivity ($b = .08$, $SE = .02$, $p = .001$, $\beta = .17$) and sexual avoidance ($b = .05$, $SE = .02$, $p = .006$, $\beta = .15$). In turn, sexual compulsivity ($b = -.25$, $SE = .07$, $p = .001$, $\beta = -.17$) and sexual avoidance ($b = -.45$, $SE = .11$, $p < .001$, $\beta = -.21$) significantly predicted lower dyadic adjustment, while the path between CSA severity and dyadic adjustment was non-significant ($b = -.03$, $SE = .03$, $p = .26$, $\beta = -.05$). The model showed that the indirect effects through sexual compulsivity latent variable ($b = -.02$, 95% CI $-.01$ to $-.04$) and sexual avoidance latent variable ($b = -.02$, 95% CI $-.01$ to $-.05$) are significant. Finally, we then tested the invariance of the model across men and women using SEM. Results revealed a non-significant chi-square difference for the measurement model ($\chi^2_{\text{difference}}(6) = 2.77$, $p = .84$) and the mediational SEM model ($\chi^2_{\text{difference}}(5) = 5.07$, $p = .41$), indicating that the model also held across gender in SEM. As in the path analysis model, we then controlled for age of the participants in the SEM model. Again, this addition to the SEM model did not change the significance and the strength of the associations between variables in the mediational model.

Discussion

The major finding of this study concerns the mediators of the CSA–dyadic adjustment relationship. Sexual compulsivity and sexual avoidance mediated the relation between CSA and dyadic adjustment for both women and men. More precisely, CSA was associated with more sexual avoidance and sexual compulsivity, which, in turn, predicted lower couple adjustment. To our knowledge, this is the first study suggesting that, in CSA survivors, these two forms of sexual functioning are associated with couple satisfaction. DiLillo et al. (2009) have previously reported non-significant findings for sexual intercourse frequency in relation to couple satisfaction in married couples. The present findings clearly showed that alternative sexual mediators may be useful markers of sexual difficulties in CSA survivors. In addition, our results go beyond the conclusions of past studies focusing either on sexual inhibition or on compulsiveness in samples consisted strictly of women or men (Forouzan & Van Gijseghem, 2005; Jacob & Veach, 2005; Lemieux & Byers, 2008; Parsons et al., 2012). Thus, they provide preliminary support for a dual-pathway model of sexual outcomes in CSA survivors such as those proposed by Aaron (2012) and Colangelo and Keefe-Cooperman (2012). However, these theoretical proposals need to be extended to take into account that for CSA survivors, symptoms of sexual inhibitions and compulsiveness may coexist and create sexually ambivalent attitudes and behaviors (Noll et al., 2003).

The experience of sexual and psychological intimacy in adult relationships represents a challenging developmental task that may trigger unresolved trauma-related affects (i.e., fear, guilt, panic, pain, helplessness, anger, shame, etc.). When past affect-laden memories have not been defused with the help of trustful adults, sexual interactions may be organized along patterns of dominance and submissiveness that tend to disrupt the quality of object relations (Kernberg, 2011). In some cases, heightened submissiveness might develop as an automatic response to a distorted representation of the partner as an abuser who is then perceived as sexually uncaring, self-centered, and forcefully demanding. Sexually submissive behaviors under conditions of fear and threats typically represent passive coping strategies that have been found to lead to the inhibition of sexual pleasure and a phobic avoidance of sexual activities (Aaron, 2012). In other cases, sexual compulsiveness may emerge as a dominance-oriented coping strategy designed to overcome a view of the self as a passive, helpless victim or as a desperate attempt to explore the mind of the abuser (Gold & Heffner, 1998).

However, our findings also show that sexual avoidance and compulsiveness are not mutually exclusive and that both groups of symptoms may co-occur within CSA survivors and help to explain couple dissatisfaction. This is consistent

with a pattern of disorganized attachment (Alexander, 1992) and with the rapidly oscillating mental states often documented in CSA survivors (Buttenheim & Levendosky, 1994). Sexual avoidance and compulsivity may also surface at different developmental stages of the couple's relationship, with compulsivity characterizing the early stage followed by avoidance when commitment pressures increases (Jacob & Veach, 2005; Schwartz & Galperin, 2002). However, the quality of object relations and patterns of dominance and submissiveness has rarely been assessed and even fewer studies have explored the issues of intimacy and sexual functioning within the sexual relationships of CSA survivors, thus, mechanisms by which CSA may affect adult sexuality remain misunderstood (Davis & Petretic-Jackson, 2000; Schwartz & Galperin, 2002).

Our mediational model demonstrated invariance across gender. This is an important finding even if it fails to support Aaron's (2012) differential pathways hypothesis whereby in men, CSA may be mostly associated with sexual compulsiveness whereas in women, sexual avoidance would predominate. Despite this invariance across gender, mean comparisons between men and women CSA survivors indicated that men CSA survivors reported more sexual compulsivity than women CSA survivors, partially supporting Aaron's (2012) theoretical hypothesis. Two methodological factors probably explain our ability to demonstrate gender invariance. First, the present results stem from a community sample of generally well-functioning adults in intimate couple relationships. This may reduce gender differences observed in past studies using clinical samples (Nelson & Wampler, 2000). Second, some aspects of our methodology may have facilitated greater disclosure of CSA in male survivors (almost 20% as compared to approximately 8% in a recent meta-analytic study; Stoltenborgh, Van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). For example, the use of an anonymous Internet-based survey (Bagley & Genuis, 1991), a broader definition of CSA, and a neutral inquiry that did not specifically label reported sexual experiences as CSA or the participants as victims may have helped to identify more men as CSA survivors. If some male survivors had been excluded from the group of CSA survivors and placed in the control group, this could have contributed to artificial evidence of a gender difference. Thus, the present results corroborate the equity model of sexuality hypothesizing more similarities than differences between men and women in sexual behavior, roles and values, unlike the traditional male-female double standard (McCarthy & Bodnar, 2005). This parallels previous findings regarding CSA-related outcomes in men and women (Godbout, Lussier, & Sabourin, 2006).

Although we presented an integrative mediational model that satisfactorily represented the associations between CSA, sexual behaviors and later couple outcomes, it is important to note certain limitations of the present study. Given the cross-sectional nature of this study, it is not possible to draw causal conclusions about our mediational findings. Couple satisfaction may also have an impact on sexual behaviors, or more likely, these constructs are probably mutually influential. Researchers should consider conducting longitudinal studies to better understand the complex interplay of couple difficulties and individual sexual behaviors following CSA. An online survey was used in order to facilitate the examination of such a sensitive subject as sexual abuse and sexual behavior. However, the representativeness of our sample and generalizability of our results may be limited by this sampling strategy. First, this sample excluded individuals who did not have access to the Internet. Although the majority of North Americans now have online access, data suggest that Internet users are more likely than non-users to be White, young, and to have children (U.S. Department of Commerce, 2002). Second, the potential for self-selection biases regarding individuals who volunteer for online sexuality research, and the over-representation of women in our final sample (compared to our excluded sample) may also reduce the generalizability of this study. Future studies are needed to replicate our mediational model with different subject populations and in different settings.

The use of simple retrospective self-reports of adults recalling child abuse histories could have also led to underreporting biases or distortions in the recall of traumatic events. However, the high prevalence rates, particularly among men, suggest that the neutral inquiry used in this study may have decreased underreporting biases by facilitating disclosure. To increase item neutrality, we developed an instrument to assess CSA that used terms such as sexual experiences instead of sexual abuse. The use of neutral terms in CSA assessment and of a non-standardized scale involved potential bias and, thus, the results of the present study should be replicated in other studies using validated scales and the instrument developed for this study should be more extensively validated.

It should be noted that the current study only evaluated two sexual outcomes and one couple outcome. As such, it is possible that CSA is predictive of other types of sexual or relationship outcomes not included in this study, such as sexual motivations, intimacy difficulties or intimate partner violence. The mediation model assessed is based on the dual-pathway model of sexual outcomes suggested by Aaron (2012) and Colangelo and Keefe-Cooperman (2012). It will be important to extend this model to take into account the coexistence of both sexual behaviors and thus the presence of sexually ambivalent behaviors. Moreover, the mediational model takes into account a gender moderation hypothesis, which was not confirmed. It is possible there are differences in adjustment as a function of other personal or marital moderators, such as age of the participants, commitment level, legal marriage versus co-habitation, or length of the relationship. Future studies should examine if the associations are confirmed across those moderators or, at least, control for these variables.

For the outcomes that were examined, the amount of variance explained by the models was modest. This is consistent with the notion that sexual behavior and couple satisfaction have multiple determinants. Moreover, CSA is a distal factor for both outcomes, which suggests that other, perhaps more proximal intervening factors that were not considered in this study may have an important contribution in our model (e.g., communication skills or problem-solving behaviors). Future investigators may adopt a Structural Equation Modeling approach to investigate the mediators of the relation between CSA,

sexual behaviors and dyadic adjustment, in which multiple measures of sexuality and couple relationship are used. This approach would allow researchers to better assess the constructs of interest and confirm our results for the presence of two sexual pathways in the aftermath of CSA. In addition, other studies have suggested that men and women report similar negative consequences of CSA but that the mechanisms behind CSA outcomes may be different (Senn, Carey, Vanable, Coury-Doniger, & Urban, 2006). Further examination of such mechanisms behind both sexual pathways for both women and men is needed.

Finally, since we only recruited participants in a couple relationship who volunteered to participate in this survey, it is impossible to extend our conclusions to single and unpartnered CSA survivors. It will be important to confirm the presence of both sexual pathways in other marital and relationship contexts (e.g., separately examining same-sex relationships) and to explore their impact on interpersonal relationships. Regardless of these limitations, the findings from the present study suggest a developmental process in which CSA may set women and men on a similar path leading to marital difficulties via multiple sexual pathways.

The current study has implications for researchers and practitioners. The findings from this study suggest potential targets for interventions. The observation that sexual compulsivity and avoidance mediate couple satisfaction for men and women underscores the importance to consider the two sexual pathways in the evaluation of CSA survivors for both genders and to assess more fully the way the CSA may have disrupted the quality of object relations and attachment representations (Buttenheim & Levendosky, 1994; Schwartz & Galperin, 2002). These findings also suggest sexuality as a relevant intervention target with couples in which one or both partners are CSA survivors. An intervention might attempt to help survivors understand how CSA can lead to maladaptive sexual behaviors due to difficulty with managing intimacy or because of maladaptive representations of self and of others. A better understanding of the role of CSA in different sexual behaviors may promote the development of efficient targeted treatments for distinct subgroups of CSA survivors. A prevention implication of our findings is that an effective intervention focusing on both sexual pathways after CSA may offset the development of long lasting couple distress in adulthood.

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