Mindfulness (2018) 9:1594–1603
https://doi.org/10.1007/s12671-018-0906-3

ORIGINAL PAPER

Childhood Cumulative Trauma and Depressive Symptoms in Adulthood: the Role of Mindfulness and Dissociation

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Published online: 1 March 2018

Abstract

Considering the heightened risk of adults who have experienced childhood cumulative trauma (CCT) to suffer from depressive symptoms, the present study aimed to investigate mindfulness and dissociation as possible mechanisms implicated in this relationship. A total of 234 clients seeking psychotherapy for sexual and/or relational difficulties completed self-reported questionnaires as part of the evaluation phase within their treatment. The assessment tools evaluated the experience of childhood trauma, depressive symptoms, mindfulness levels, and dissociative symptoms. Results of structural equation modeling indicated that the link between CCT and depressive symptoms was fully mediated by both mindfulness and dissociation. In light of our results, it is recommended to assess systematically the presence of CCT, depressive symptoms, and dissociation in clients seeking help for sexual and/or relational issues, even though their primary motive may seem unrelated. Findings suggest that treatments focusing on fostering mindfulness might be beneficial in reducing depressive symptoms for individuals who experienced CCT.

Keywords Childhood cumulative trauma · Depressive symptoms · Mindfulness · Dissociation

Prevalence rates of adults who have experienced childhood maltreatment (e.g., child physical and psychological abuse or neglect, sexual abuse, or exposure to intimate partner violence) are high, ranging from 27 to 60% in community samples (Bigras, Daspe, Godbout, Briere, and Sabourin 2017a; Colman et al. 2013) and reaching up to 94% in clinical populations (Bigras, Godbout, Hébert, and Sabourin 2017b). Studies have shown that different forms of childhood maltreatment tend to co-occur (Lanktree et al. 2008); the experience of multiple forms of childhood maltreatment is referred to as childhood cumulative trauma (CCT; Bigras et al. 2017a). CCT is considered an endemic problem which is related to long-lasting psychological distress (Briere and Elliott 2003) to a greater extent than the experience of a single form of abuse (Hodges et al. 2013; Nam et al. 2016).

Depressive symptoms are among the most documented consequences associated with childhood maltreatment (see Dugal et al. 2016), and childhood maltreatment is reported as a significant correlate of major depressive disorder in adulthood (Knoll and MacLennan 2017). A recent meta-analysis of 184 studies found that adults who experienced any form of childhood maltreatment were 2.81 times more likely to develop depression in adulthood, whereas for those who experienced CCT, the odds increased to 3.61 (Nelson et al. 2017). Prevalence rates of depression are high in Canadian (11.2%; Knoll and MacLennan 2017) and American general populations (7.6%; Pratt and Brody 2014), with higher rates in clinical populations (e.g., 38.6%; Belvederi Murri et al. 2017). These data highlight the importance of developing a better understanding of the mechanisms underlying the development of depressive symptoms in survivors of CCT. Yet, very few studies have examined the mechanism linking CCT and depressive symptoms in adulthood. One study conducted on a sample of elderly individuals indicated that avoidance of thoughts and emotions partially explained the relationship between CCT and depressive symptoms (Dulin and Passmore 2010). Another study found that impulsivity and

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hopelessness acted as mediators of the link between CCT and depression in incarcerated youth (Wanklyn et al. 2012).

Mindfulness and dissociation are both potential mechanisms explaining the link between CCT and depressive symptoms. More specifically, mindfulness can be defined as "the state of being attentive to and aware of what is taking place in the present" (Brown and Ryan 2003, p. 822). Survivors of childhood maltreatment, and potentially even more those who have experienced CCT, are likely to show lower levels of mindfulness (Michal et al. 2007). In the face of a traumatic event, the survivor is typically in a state of alarm, with his/her biological systems hyper activated as in survival mode, and traumatic memories (e.g., thoughts and feelings) tend to be embodied in the survivor's experience (Follette et al. 2004). Those traumatic thoughts and feelings are likely to be triggered at some point later in life, become chronic, and impede mindfulness capacities through the use of experiential avoidance (Godbout et al. 2016). Indeed, long-lasting trauma symptoms (i.e., flashbacks, intrusive thoughts, painful thoughts, and other posttraumatic symptoms) resulting from exposure to traumatic events often reflect a narrowed behavioral repertoire, highlighting a sort of psychological rigidity that has been described as "not being able to be mindful or present" (Follette et al. 2004, p. 51; Thompson and Waltz 2010).

Previous findings showed that increased levels of mindfulness are correlated with lower symptoms of depression (Zvolensky et al. 2005). The poorer mindfulness skills observed in CCT survivors might therefore partly explain their greater likelihood of developing depressive symptoms. Identifying mindfulness as a mechanism of the association between CCT and depression could highlight an important target for intervention. Indeed, a substantial body of literature indicates the benefits of increased mindfulness skills in the reduction of a variety of symptoms, including those associated with major depressive disorder (Ma and Teasdale 2004; Teasdale et al. 2002). More precisely, authors suggest that mindfulness could allow clients to face their internal worlds, without rumination but with acceptation; focusing on the "here and now" is thought to help clients become more aware of their negative thoughts, to acknowledge them without judgment, and to realize they are not accurate reflections of their reality, which could help them deal with depressive symptoms (Hofmann et al. 2010; Teasdale et al. 2014). Supporting these ideas, multiple clinical interventions have been validated such as mindfulness-based stress reduction (MBSR; Teasdale et al.1995), mindfulness-based cognitive therapy (MBCT; Segal et al. 2002) and acceptance commitment therapy (ACT; Hayes et al.1999). Yet, there is surprisingly no empirical research testing the role of mindfulness in the relationship between exposure to CCT and depressive symptoms.

As for dissociation, it is defined as disturbances or alterations in consciousness, perception, memory, or identity (DSM-5; American Psychological Association 2013). A main function of dissociation is thought to be the avoidance of painful external experiences or coping with suffering or unbearable emotional states (Briere 2002). Maintained by a conditioned process, the avoidance of painful internal states represents the antithesis of mindful behaviors (Follette et al. 2006). When it becomes the main coping strategy, dissociation rather prolongs or exacerbates psychological distress in the long term, potentially because the avoided material cannot be invested and psychologically metabolized (Briere 2015). Adopting distress-sustaining behaviors while trying simultaneously to avoid painful or upsetting internal states can be referred to as a pain paradox. With the objective to reduce distress, the individual may do things that rather intensify unwanted thoughts and feelings, causing them to linger. Moreover, by restricting attention and deadening awareness through the use of dissociation, the individual may miss positive elements of life that are associated with well-being. Anesthetizing their experience may consecutively increase avoidance and eliminate the manifestations of any possible positive options in their lives, which may eventually lead to depressive symptoms (Briere 2015).

Dissociation is a central variable to include in a model examining the mediating role of mindfulness in CCT and depressive symptoms because it is a typical documented effect of CCT (Briere et al.2016), and may be inversely related to mindfulness. More precisely, individuals exposed to CCT might use dissociation for its capacity to numb, alter awareness, or temporarily "not feel" negative experiences, thereby redirecting attention away from upsetting emotions (Briere et al. 2010). Yet, while avoidance strategies, such as dissociation, are typically used to avoid suffering, they may paradoxically promote or maintain psychological distress over the long haul (Hayes et al. 1996). Dissociation and depressive symptoms have been found to be linked, particularly in childhood maltreatment survivors (Francia-Martínez et al. 2003). However, although researchers have suggested that avoidant coping strategies could explain the relationship between childhood maltreatment and psychological distress (Min et al. 2007), to our knowledge, no study explored a multivariate model of the shared and unique contributions of both mindfulness and dissociation as mediators of the effect of CCT on depressive symptoms.

The present study aimed to examine the potential roles of mindfulness and dissociation in the relationship between CCT and depressive symptoms as they both represent seemingly opposite poles in reacting to a traumatic experience, and are also core aspects of the central dialectic of trauma (Follette and Pistorello 2007; Herman 1992). It was hypothesized that CCT would be related to increased depressive symptoms and that mindfulness and dissociation would act as mediators of this relationship. More specifically, it was expected that CCT would lead to higher levels of dissociation, which in turn

would be associated with greater depressive symptoms. It was also expected that CCT would lead to lower levels of mindfulness, which in turn would be associated to greater depressive symptoms. This study focused on clients consulting for sexual and/or relational issues. The documented link between sexual-relational functioning and depression (Forbes et al. 2016), as well as the high rates of childhood trauma found in this clinical population (e.g., Berthelot et al. 2014; Bigras et al. 2017b), argue for the clinical relevance of examining the hypothesized model in this specific sample. In doing so, findings are likely to inform clinical practice for treating adults who have experienced CCT and suffer from depressive symptoms.

Method

Participants

A total of 234 treatment-seeking individuals were recruited for the current study. The sample consisted of 130 women (55.6%) and 104 men (44.4%), with a mean age of 38.7 years (SD = 13.1, ranged from 17 to 77). Clients were recruited via different clinical settings where they attended therapy with graduate interns in sex therapy: in a university clinic ($n = 52$, 27.2%), hospital/medical settings ($n = 110$, 57.5%), or other clinical settings offering sex therapy (i.e., community centers, colleges, private practices, and specialized organizations in sexual delinquency; $n = 29$, 15.1%). Sociodemographic characteristics of the participants are presented in Table 1. The majority were Canadian and earned a college or university degree. Almost half had low personal income, and, regarding current relationship status, the majority reported being single, cohabitating or involved with a common-law partner. The majority of participants defined themselves as heterosexuals.

Table 1 Sociodemographic information

Variables	Number	Percent
Relationship status		
Single	61	26.1
Single, with occasional partners	22	9.4
In a relationship with a regular partner	38	16.2
In a common-law relationship	74	31.6
Married	38	16.2
Other, widower	1	0.4
Sexual orientation, self-defined		
Heterosexual	201	87.0
Homosexual	13	5.6
Bisexual	13	5.6
Queer	1	0.4
Other, questioning	3	1.3
Yearly income		
Less than 19,999$CAD	96	42.1
20,000$CAD–39,999$CAD	70	30.7
40,000$CAD–59,999$CAD	35	15.4
60,000$CAD–79,999$CAD	16	7.0
80,000$CAD–99,999$CAD	5	2.2
More than 100,000$CAD	6	2.6

Procedure

Data were collected from 2012 to 2014, during the first few therapy sessions. Clinical interns in sex therapy explained the research project, and interested clients completed the consent form. The study was authorized by the university's ethics committee. Participants completed self-reported questionnaires in paper or electronic format. To warrant anonymity, an alphanumeric code was randomly attributed to each participant. A summary of the results was provided (only with the participant's authorization) to the interns and their clinical supervisor.

Measures

Childhood Cumulative Trauma A French version of the Early Trauma Inventory Self Report-Short Form (Bremner et al. 2007) as well as items derived from previous studies on childhood maltreatment (Bernstein et al. 2003; Briere et al. 2012; Godbout et al. 2009; Higgins and McCabe 2001) were used to assess potential experiences with eight different forms of childhood maltreatment before the age of 18 (e.g., Hodges et al. 2013), namely: child sexual abuse (CSA), psychological and physical parental violence, psychological and physical parental neglect, exposure to psychological and physical violence between parents, and peer bullying (specific items can be consulted in Bigras et al. 2017b). In our sample, the internal consistency of the questionnaire used to measure CCT was good ($\alpha = .90$). Participants indicated the frequency with which they experienced each form of trauma during a typical year, prior to the age of 18, on a scale ranging from 0 = never, 1 = 1 time a year, 2 = 2–5 times a year, 3 = 6–10 times a year, 4 = 1 time a month, 5 = 1 time a week, to 6 = every day or almost. The variables were then recoded in order to have a dichotomous score for each form of childhood trauma; when the participants indicated 1 or more, the variable was recoded as 1 = presence, and 0 = absence (e.g., 0 = 0 and 1 thru 6 = 1). CSA was assessed with two items "I had a sexual contact with an adult or a child even though I didn't want to" and "I had a sexual contact with someone at least 5 years older than me before the age of 16 or who was in a position of authority." If the participant answered "yes" to at least one of these questions, a score of 1 was attributed to the CSA variable; otherwise, the participant received a score of 0. Dichotomized

scores for each form of trauma were then summed to create a CCT variable ranging from 0 to 8, with higher scores indicating more traumatic experiences.

Dissociation A French version of the 10-item subscale of the Trauma Symptom Inventory-2 (TSI-2; Briere 2011) was used to assess dissociation (e.g., cognitive disengagement, out-of-body experience). Scores range from 0 to 30 with higher scores indicating greater dissociative symptoms. In our sample, the consistency of this questionnaire was good ($\alpha = .82$), approaching the one reported by Briere (2011) ($\alpha = .86$). Based on the TSI-2 manual, T-scores of 65 and above are considered clinically elevated.

Mindfulness The Mindfulness Attention Awareness Scale (MAAS; Brown and Ryan 2003) translated in French by Jermann et al. (2009) was used to assess mindfulness traits. The questionnaire consists of 15 items on a six-point Likert scale ranging from 1 = almost always to 6 = almost never. An example of an item is "I do jobs or tasks automatically, without being aware of what I'm doing." Scores range from 15 to 90 with higher scores indicating higher levels of mindfulness. Internal consistency was good both in the validation study ($\alpha = .87$; Brown and Ryan 2003) and with the current sample ($\alpha = .90$).

Depressive Symptoms Two questionnaires were used to measure depressive symptoms. First, the French version of the Beck Depression Inventory-13 (BDI-13; Beck 1978; Bourque and Beaudette 1982) asks participants to select the statement that best describes their situation over the past week, between 4 and 6 response options. For every item, the response is coded with a value ranging from 0 to 3 (0 = I am not particularly pessimistic or discouraged about the future, 1 = I feel discouraged about the future, 2 = I feel that I will not ever get over my troubles, 3 = I feel that the future is hopeless and that things cannot improve). Scores on the BDI-13 range from 0 to 39, with scores of 16 and above suggesting severe depressive symptoms (Bourque and Beaudette 1982; Burns and Beck 1978). The BDI-13 showed a good internal consistency ($\alpha = .91$) in our study, which corresponds to the validation study ($\alpha = .90$; Bourque and Beaudette 1982). Second, the French version (Boyer et al. 1993) of the Depressive Symptoms subscale of the Psychiatric Symptom Index (PSI) was used (Ilfeld 1976), with the addition of one item concerning suicidal ideation. The participants indicated the frequency with which they had experienced each statement in the past week, ranging from 0 = never, 1 = sometimes, 2 = most times, to 3 = very frequently. An example is "I got bored or lack of interest about something." Previous studies indicated good consistency for this 7-item measure (Godbout et al. 2009). In the current sample, Cronbach's $\alpha = .82$. Scores range from 0 to 21 with higher scores indicating more depressive symptoms. Scores on the BDI-13 and PSI were both used as indicators of a latent variable of depressive symptoms.

Data Analyses

Descriptive and correlational analyses were conducted using SPSS version 21 (2012) to examine the rates of CCT and depressive symptoms within the sample as well as the associations between the studied variables. The hypothesized model was tested using structural equation modeling in Mplus (Muthén and Muthén 1998–2012). Adequacy of model fit was assessed through several indices: the chi-square statistic, the comparative fit index (CFI; Bentler 1990), and the root mean square error of approximation (RMSEA; Steiger 1990). A statistically nonsignificant chi-square value, a CFI value of .90 or higher, and a RMSEA value below .06 are considered indicators of good fit (Hu and Bentler 1999), with a RMSEA 90% confidence interval ranging from 0 to .08 indicating a good precision in assessing model fit. Because chi-square tests are sensitive to sample size (Kline 2011), we also used the ratio of chi-square to degrees of freedom (χ^2/df). Values less than 5 indicate a satisfactory fit, but a more conservative cut-off value of 3 is ideal (Ullman 2001).

Examination of indirect effects was performed using the Mplus model indirect command (Muthén and Muthén 1998–2012). A bootstrap confidence interval of 95% was used to verify the significance of indirect effects (MacKinnon and Fairchild 2009). This bias-corrected method uses a distribution of coefficients' products obtained through resampling, generating confidence limits in order to identify the indirect effects' true coefficient value. When zero is not in the confidence interval, the indirect effect is considered significant (Preacher and Hayes 2004). Next, we computed the ratio of the indirect effect to the total effect (Preacher and Kelley 2011). A higher value for the ratio indicates a greater contribution of the mediators in the relationship between the independent variable and the dependent variable.

Gender invariance was evaluated using multi-group analyses. Freely estimated models for women and men were compared to models in which the regression paths were constrained to be equal across gender. A significant univariate incremental chi-square value ($p < .05$) indicates evidence of differences across men and women whereas a p value below .05 suggests that the hypothesized model can be generalized across gender.

Results

As presented in Table 2, the prevalence of the eight different forms of childhood maltreatment endorsed by the participants varied between 28.5 and 73.6%. Based on the clinical cut-off

score for dissociation (Briere 2011), 26.5% of our sample had clinically elevated symptoms of dissociation and 13.9% had problematic scores. As for depressive symptoms, according to the clinical cut-off score (Bourque and Beaudette 1982; Burns and Beck 1978), 15.8% of the participants showed symptoms of severe depression and 29.1% of moderate depression. Means and standard deviations for the key variables are shown in Table 3, presented according to the number of childhood traumas experienced. Also shown in this table are the rates of participants showing clinically elevated scores for both dissociation and depressive symptoms using the BDI-13.

Table 4 shows means and standard deviations for the whole sample, as well as correlations between the study variables. Results showed that CCT was significantly associated with increased dissociation and depressive symptoms, and negatively linked to mindfulness. Mindfulness was significantly associated with lower levels of depressive symptoms, whereas dissociation was related to higher levels of depressive symptoms. Finally, dissociation and mindfulness were negatively correlated.

Integrative Model of CCT, Mindfulness, Dissociation, and Depressive Symptoms

Results of the structural equation model are presented in Fig. 1. The direct link between CCT and depressive symptoms was significant (see in brackets) before the inclusion of the mediators. After adding mindfulness and dissociation to the model, the direct link between CCT and depressive symptoms was no longer significant. Results suggest that CCT leads to higher dissociation, which in turn leads to more depressive symptoms. CCT also significantly contributes to lower levels of mindfulness, which in turn leads to more depressive symptoms. The covariance between the error terms for dissociation and mindfulness was negative and significant. Fit indices indicated that the specified model was a good representation of the data, $\chi^2(2) = .43$, $p = .81$, $\chi^2/dl = .21$, CFI = 1.00, RMSEA = .00 with 90% C.I. [.00, .08].

Table 2 Prevalence of childhood interpersonal traumas

Variables	Number	Percent
Childhood sexual abuse	90	39.5
Parental psychological violence	144	63.4
Parental physical violence	116	51.1
Parental psychological neglect	167	73.6
Parental physical neglect	65	28.5
Exposure to interparental psychological violence	133	58.3
Exposure to interparental physical violence	42	18.3
Peer bullying	144	63.2

Indirect Effects Tests of indirect effects showed that the path from CCT to depressive symptoms going through both dissociation ($b = .14$, 95% bootstrap C.I. = .03, .28) and mindfulness ($b = .53$, 95% bootstrap C.I. = .30, .78) were significant, supporting the mediational role of both dissociation and mindfulness. More specifically, the proportion of the indirect effect going through dissociation was 14% whereas the proportion of the indirect effect going through mindfulness was 52%. Overall, the final model explained 3.3% of the variance in dissociation, 14.4% of the variance in mindfulness, and 38.2% of the variance in depressive symptoms.

Gender Invariance The model was first assessed in women and men, allowing all paths to be freely estimated, to ensure that the model is a good representation of the data in both groups. Results revealed a good-fitting model: $\chi^2(5) = 1.566$, $p = .905$, $\chi 2/df = .31$, CFI = 1.00, RMSEA = .00, 90% IC (.00 to .05). This freely estimated model was then compared to a more restrictive model in which all paths, variances, and covariances were constrained to be equal across men and women. Adding equality constraints did not significantly worsen the fit of the model, $\Delta\chi^2(12) = 15.32$, $p = .224$, suggesting that there are no significant gender differences in the associations between CCT, dissociation, mindfulness, and depression.

Discussion

The aim of this study was to examine the hypothesized mediational role of mindfulness and dissociation in the relationship between CCT and depressive symptoms in a clinical sample of individuals seeking sex therapy. Our findings support the hypothesis that both mindfulness and dissociation act as distinct mediators of the link between CCT and depressive symptoms. Results indicated that a greater accumulation of different forms of interpersonal traumas during childhood is associated with a decreased capacity to be attentive to and aware of what is taking place in the present moment (lower scores of mindfulness) and higher dissociation, which in turn led to higher depressive symptoms (e.g., increased sadness, unhappiness, guilt, irritability, and loss of interest towards what was previously enjoyed).

Previous studies documented the efficiency of mindfulness-based treatments to treat depressive symptoms (e.g., Forman et al. 2007). However this study suggests the implicated mechanisms of both mindfulness and dissociation in the relationship between CCT and depressive symptoms. This study provides empirical support regarding the role of mindfulness in treating adults who experienced childhood maltreatment, especially CCT. These data support the growing literature addressing the

Table 3 Descriptive data by number of childhood traumas

			Mindfulness		Depression (PSI)		Dissociation				Depression (BDI)			
									In the clinical range*				In the clinical range**	
Number of childhood traumas	*n*	%	*M*	SD	*M*	SD	*M*	SD	*n*	%	*M*	SD	*n*	%
0	14	6.1	74.3	9.7	3.7	3.7	55.0	13.9	1	7.1	4.2	5.6	1	7.1
1	19	8.3	70.7	11.1	5.8	4.0	52.9	11.4	3	15.8	5.0	4.6	0	0
2	36	15.7	67.5	14.4	5.7	3.8	55.4	14.5	8	22.2	7.1	6.2	4	11.1
3	34	14.8	65.1	9.4	5.9	3.7	57.8	10.5	11	32.4	6.8	5.6	2	5.9
4	29	12.6	63.4	12.6	8.6	5.3	58.0	11.6	8	27.6	10.0	6.8	6	20.7
5	33	14.3	58.7	12.9	8.7	5.1	58.3	11.2	7	21.2	12.2	7.8	9	27.3
6	34	14.8	61.9	13.3	7.2	4.7	57.1	13.1	8	23.5	8.7	7.1	5	14.7
7	25	10.9	56.8	11.1	7.8	5.3	65.4	12.4	13	52.0	11.4	8.9	7	28.0
8	6	2.6	47.5	17.4	8.7	6.5	57.8	9.1	1	16.7	12.0	9.5	3	50.0

*Clinically elevated scores only; **Severe symptoms of depression only

effectiveness of mindfulness in psychological treatment (e.g., Thompson et al. 2011).

Results support our main hypotheses that mindfulness and dissociation act as two distinct mediators of the association between CCT and depressive symptoms in adulthood. These findings are in line with Michal et al.'s (2007) postulate suggesting that dissociation and mindfulness are not simply opposite constructs, but distinct phenomena. Overall, our results showed that adults who experienced multiple forms of childhood traumas are more likely to avoid internal states that could be painful or upsetting, as reflected by lower mindfulness capacities and higher levels of dissociation. In turn, this deadened awareness to the world and involvement in distress-sustaining behaviors are likely to increase their depressive symptoms. This mechanism may well represent a behavioral loop (Hayes and Gifford 1997) of negative reinforcement, where one could temporary deal with painful depressive symptoms through the use of avoidance strategies including dissociation. This is also in line with the pain paradox and the central dialectic of trauma theory stating that trauma survivors may use avoidance strategies to avoid distressing trauma-related emotions, but that this avoidance maintains or even increases the symptoms (Briere 2015; Follette and Pistorello 2007). This model puts forth that in order to stop this vicious cycle of negative reinforcement, trauma survivors should progressively experience painful states and/or thoughts, and avoid avoidance per se. Indeed, various theoretical approaches suggest that directly engaging psychological pain within the therapeutic window (see Briere 2002) allows the individual to habituate, desensitize, and cognitively process traumatic mental material until it no longer produces distress or intrusive thoughts (Briere 2015).

Finally, our results highlighted a considerable prevalence of several forms of childhood traumas and an elevated prevalence of their accumulation in individuals consulting for sexual and/or relational problems. Our data also revealed important rates of psychological distress (i.e., elevated depression and dissociation symptoms), which is consistent with the established scientific knowledge that psychological distress such as depression (see Brotto et al. 2016, for a review) or symptom complexity (Bigras et al. 2017b) affects sexuality in various ways. Precisely, 26.5% of clients in this sample

Table 4 Correlations among study variables

Variables	*M*	SD	1.	2.	3.	4.	5.
1. CCT	3.92	2.15	–				
2. Dissociation	57.68	12.44	.19**	–			
3. Mindfulness	63.48	13.30	− .38**	− .45**	–		
4. Depression BDI-13	8.60	7.20	.29**	.44**	− .55**	–	
5. Depression PSI	6.96	4.74	.24**	.37**	− .47**	.79**	–

CCT Childhood Cumulative Trauma, *BDI-13* Beck Depression Inventory-13, *PSI* Psychiatric Symptom Index

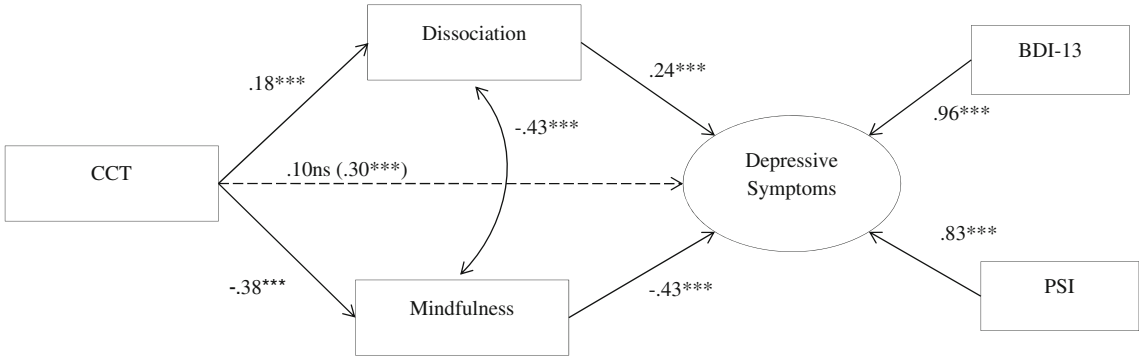

Fig. 1 The role of mindfulness and dissociation in the relationship between childhood cumulative trauma and depressive symptoms. *CCT* Childhood Cumulative Trauma, *BDI-13* Beck Depression Inventory-13, *PSI* Psychiatric Symptom Index. Single asterisk indicates $p < .05$; double asterisks indicate $p < .01$; triple asterisks indicate $p < .001$

reported clinically elevated dissociative symptoms, whereas 15.8% had severe symptoms of depression and 29.1% showed moderate symptoms of depression. These findings underscore the relevance of systematically assessing the presence of psychological distress, as well as the presence of multiple forms of childhood traumas, even if the client's motive for therapy is not directly linked to these aspects (Bigras et al. 2017b), to better target symptoms and intervene adequately.

Limitations and Future Research

It is important to mention the limitations of our study. The variables were derived from retrospective self-reported questionnaires. In particular, CCT could be underestimated or overestimated given that these experiences occurred in the participants' childhood, and it could be difficult to have an exact recall of their experiences. Moreover, we cannot make any firm assumptions about the generalizability of our results considering that our sample consisted of a clinical sample of participants seeking sex therapy. Given our narrowed sample, further research should aim to replicate this study with different and broader samples. There are no causal conclusions possible when it comes to the impacts of CCT because of the cross-sectional nature of the data. In addition, we cannot examine whether the observed links between CCT, mindfulness, dissociation, and depression are maintained over time or if therapy lowers the strength of their associations. To study this possibility, future studies with post-treatment and follow-up assessments are needed. Future research could also aim to develop new longitudinal research protocols bridging existing mindfulness-based treatments with sex therapy clinical settings to evaluate their effectiveness over time regarding depression.

Our model suggests that treatments targeting dissociative symptoms and fostering mindfulness capacities could help reduce depressive symptoms in CCT survivors, since they are at a greater risk of adopting dysfunctional avoidance strategies that can maintain or exacerbate their present difficulties. Further research is needed to determine if validated mindfulness-based treatments such as MBSR (Teasdale et al. 1995), ACT (Hayes et al. 1999), and MBCT (Segal et al. 2002) could be used to help CCT survivors who suffer from depression (e.g., Batink et al. 2013). A humanistic, existential, phenomenological clinical approach fosters similar concepts that are put forth in mindfulness such as being fully present and being non-judgmental towards oneself (see Felder et al. 2014). More precisely, it is encouraged to allow clients to be in contact with their internal world and emotions, to experience and express their feelings without the fear of judgment and to help them recognize and identify their emotions. One's own internal world is such complex realm and future studies are needed to examine how therapeutic intervention could facilitate a better understanding of oneself, offering a safe-space to be vulnerable and experience the present moment as it unfolds.

Overall, our findings suggest that focusing on mindfulness could reduce depressive symptoms in clients seeking treatment for sexual and/or relational difficulties, particularly CCT survivors. Future studies could examine the effects of applying central Western and Buddhist notions in trauma processing such as "leaning in to pain" (Brach 2003) or "sitting with traumatic material" (Hayes et al. 2012). Future studies should also examine if fostering mindfulness leads to not only decreased depressive symptoms, but also overall well-being (e.g., relational, sexual, life satisfaction), because, in the end, mindfulness is more than a mere skill, it is a state of being that has great potential for increased daily happiness and an overall feeling that life is worth living, as it unfolds.

Acknowledgements The authors want to thank all the clients who participated in this study. Also, this study would not have been possible without the valuable collaboration of the graduate interns in sexology as well as a number of student members of the Trauma and Couple Research and Intervention Unit (TRACE), who collaborated in the data collection. Finally, we want to acknowledge Michel Goulet, sexologist and clinical professor of sexology, UQAM, without whom this collaboration between research and clinical work would have not been possible.

Author Contributions RB: acquisition of data, designed and executed the study, assisted with the data analyses, and drafted the manuscript. NB: designed and executed the study, assisted with the data analyses, and collaborated with the writing and editing of the paper. MÈD: performed the structural equation analysis as well as writing data analyses section, provided critical review and final approval of the manuscript. MH: provided critical review and final approval for the manuscript. NG: responsible of the project, acquisition of data, designed and executed the study, wrote the paper, supervision, review, and editing of the final manuscript.

Funding This study was partially funded by grants from the Fonds de Recherche du Québec—Santé (FRQS), the Fonds de Recherche du Québec—Société et Culture (FRQSC), the Interdisciplinary Research Centre on Intimate Relationship Problems and Sexual Abuse (CRIPCAS), and UQAM, to the last author.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflicts of interest.

Ethic Statement All procedures performed in studies involving human participants were in accordance with the ethical standards of the Université du Québec à Montréal (UQAM) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The research project was approved by the UQAM Ethic Institutional Board.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals.

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