A Hierarchical Cluster Analysis of Childhood Interpersonal Trauma and Dispositional Mindfulness: Heterogeneity of Sexual and Relational Outcomes in Adulthood

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ABSTRACT

The current mixed-method study aimed to 1) identify different childhood interpersonal trauma (CIT) and dispositional mindfulness (DM) profiles in an adult sample; 2) illustrate these profiles with qualitative data documenting childhood sexual abuse (CSA) and CIT survivors' perceptions of their own DM; and 3) examine profile differences on sexual and relational outcomes. Participants were 292 adults who completed an online questionnaire. A subsample of participants having reported a history of CSA ($n = 51$) also completed semi-structured interviews. Hierarchical cluster, comparison, and content analyses were performed. Analyses yielded three profiles: 1) Lower victimization, high mindfulness; 2) Psychological victimization, low mindfulness; and 3) Multi-victimization, low mindfulness. Participants in profile 1 presented the lowest frequency of CIT experiences and the highest levels of DM and sexual and relational well-being. Profile 2 participants presented higher sexual and relational well-being (i.e., higher sexual satisfaction, lower sexual depression, and fewer interpersonal conflicts) than those in profile 3. By documenting distinct CIT and DM profiles and tying them to different levels of relational and sexual well-being, this study could guide practitioners in designing tailored interventions.

Childhood interpersonal trauma (CIT) is an endemic public health problem (Lambert et al., 2017) affecting millions of children worldwide (Stoltenborgh et al., 2014). CIT consists of exposure to adverse interpersonal events (e.g., physical and psychological neglect, and physical, psychological and sexual abuse; Bigras et al., 2017b) during childhood. Because of its interpersonal nature, often occurring in the context of intimate or significant relationships, CIT may be particularly damaging for an individual's relational and sexual life in adulthood (Godbout et al., 2020a, 2020b).

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CIT survivors tend to experience more difficulties in forming and maintaining significant romantic relationships, and report lower sexual satisfaction, conflict resolution skills, and sexual adjustment in adulthood, as well as lower sexual function and self-esteem (Bigras et al., 2017b; Dugal et al., 2016). Much of the literature has emphasized CSA as a factor hampering sexual and relational adjustment in adulthood (Pulverman et al., 2018). Yet, CSA often co-occurs with other types of CIT (Finkelhor et al., 2011), which are also related to sexual and relational well-being (e.g., Bigras et al., 2017a, 2017b). CITs are therefore also important to consider when identifying and treating adults with compromised sexual and relational well-being. Studies have scarcely examined sexual and relational well-being in adults reporting CSA in addition to other forms of CIT. The impact of CIT on sexual and relational outcomes may vary between survivors, suggesting different CIT survivor profiles. Such variability in survivors' outcomes might depend on dispositional factors, such as levels of dispositional mindfulness (DM). DM is defined as the awareness that arises when one is attentive to what occurs in the present moment, with acceptance and without judgment (Kabat-Zinn, 2003).

Together, CIT and DM may help identify different patterns of negative sexual and relational outcomes in adulthood. Survivors' lower sexual and relational well-being might stem not only from CIT, but also from a reduced ability to connect with oneself and with a partner during sexual and non-sexual interactions (Godbout et al., 2020a, 2020b). Accounting for DM as a clustering variable when documenting different groups of survivors might help identify different CIT survivor profiles with specific sexual and relational outcomes. DM could also prove useful to characterize the heterogeneity of CIT experiences. However, studies having examined the diversity of survivors' CIT experiences concurrently with their DM and sexual and relational well-being are scant. Such research could help practitioners to provide tailored interventions to survivors presenting sexual and relational difficulties.

Person-Centered Analyses on CIT

Previous studies have investigated CIT profiles to shed light the co-occurrence of different types of traumas (Debowska et al., 2017). Literature reviews have found two to six profiles of different forms of CIT and non-interpersonal trauma, with some studies presenting a victimization continuum from low to severe, and others, classifying different types of experiences (e.g., sexual versus nonsexual, physical versus nonphysical, etc.; O'Donnell et al., 2017). In a study examining latent classes of CIT and domestic dysfunction, four profiles were found: low adverse childhood experiences, household dysfunction and community violence, emotional adverse childhood experiences, and high/multiple adverse childhood experiences (Shin et al., 2018). Participants within the emotional adverse childhood experiences and high/multiple adverse

childhood experiences were the most likely to report psychological symptoms in adulthood (i.e., depression, anxiety, somatization). In a sample from the general population, Armour et al. (2014) found four different profiles: no abuse, emotional abuse, sexual abuse, and overall abuse. Lacelle et al. (2012) observed that women who experienced a combination of CSA and other CIT reported engaging in riskier sexual behaviors as well as having more sexual difficulties and higher negative sexual self-concept, suggesting a cumulative effect of CIT exposure on sexual health. However, studies having included DM as a clustering variable, which could shed light on CIT survivors' specificities regarding sexual and relational outcomes, are lacking.

Considering individuals' CIT experiences and their cumulative effects, notably among CSA survivors, would paint a more refined portrait of their trauma history. CSA survivors are additionally at an increased risk of experiencing multiple types of CIT (Finkelhor et al., 2011). It is relevant to examine this particular population's sexual and relational well-being in adulthood and to compare them to other participants from the same profile who did not experience CSA.

Aims and hypotheses

This study aimed to classify CIT and DM profiles and to examine their sexual and relational outcomes. The hypotheses were the following: H_1: Different, but homogenous profiles will be found based on distinct CIT and levels of DM (i.e., lower exposure to CIT/higher mindfulness; higher exposure to CIT/lower mindfulness); H_2: These profiles will present different levels of sexual and relational well-being, with profiles characterized by higher CIT exposure and lower mindfulness showing lower sexual and relational functioning; H_3: Within each profile, CSA survivors and CSA non-victims will present statistically similar levels of sexual and relational well-being.

METHOD

Procedure

This study involved a concurrent, embedded mixed methods design with a predominant quantitative component (Creswell & Plano Clark, 2007) where profiles were identified, and qualitative data were used to support, illustrate, and enrich the profiles' descriptions. Participants were recruited through social media (i.e., Facebook), advertisements posted in community organizations that offer services to CSA survivors, and word of mouth. In order to capture the widest range of experiences, recruitment continued until a minimum of 100 CSA survivors (50 men and 50 women) and 100 non-victims of CSA (50 men and 50 women) were recruited.

Participants completed an online survey assessing CIT, mindfulness, and sexual and relational well-being hosted by LimeSurvey, a secure survey platform. Eligibility criteria included being over 18 years old and having had at least one consensual sexual encounter. Then, to better understand the different profiles and focus on the specificity of CSA, all participants who experienced CSA were invited to complete a qualitative semi-structured interview (mean duration of 1.5 hours) addressing family history and CIT (e.g., "I would like you to tell me more about your family life when you were a kid and a teenager"), as well as sexual and relational well-being (e.g., "Can you tell me what sexuality represents for you?"). Individuals interested in participating in the qualitative component of the study (n = 66) were contacted by e-mail. Of these, one did not meet the inclusion criteria, one declined to participate, and 13 either did not follow up on the invitation or were experiencing personal difficulties at the time of data collection. Participants were interviewed in person or virtually to facilitate inclusion regardless of geographic location. All interviews were recorded and transcribed. The study was approved by the Université du Québec à Montréal's institutional research ethics board.

Participants

Quantitative component

Of the 295 adults who were recruited, three participants were excluded because they did not fit into any cluster, leaving a final sample of 292 participants. Participants' mean age was 37.08 years old (SD = 12.94), and 59.9% identified as women. Most participants were born in Canada (82.1%) and primarily spoke French (92.5%), and over half (59.5%) were in a relationship (e.g., dating, living together, married). Over one-fourth of participants (28.8%) had a personal annual income of $20,000 – $39,999 (CAD), and 34.4% had an undergraduate degree. Regarding CIT occurrence, participants reported physical neglect (25.8%), psychological neglect (78.6%), physical abuse (51.5%), psychological abuse (61.0%), and sexual abuse (59.7%). Among CSA survivors, a majority (60.0%) experienced the abuse before the age of 16, and 40.0%, between the ages of 16 and 18 years. Almost half (45.9%) reported experiencing CSA at the hands of a person five years older than themselves or by an authority figure, and 55.9% reported that it occurred in the context of unwanted sexual activity. Most (58.8%) CSA events were perpetrated by a family member. The high rates of CIT within the sample may be explained by the study's focus on CSA.

Qualitative component

A total of 51 CSA survivors (25 women, 26 men) were interviewed. Their mean age was 44.65 years old (*SD* = 12.63). Most of them were born in Canada (88.2%) and primarily spoke French (90.2%). About one-third of

participants (30.6%) reported a personal annual income between $0 and $19,999 (CAD), and 41.0% had an undergraduate degree. Half (49.0%) were in a relationship.

Measures

A sociodemographic questionnaire was used to gather information on participants' age, birthplace, occupation, relationship status, level of education, and personal annual income.

CIT and CSA

A 12-item self-report questionnaire assessed participants' experience of four types of CIT perpetrated by a parental figure before the age of 18: 1) physical neglect (e.g., "Shut me in a room for an extended period."), 2) psychological neglect (e.g., "Ignored me, wasn't there when I needed them, or seemed not to like me."), 3) physical abuse (e.g., "Slapped me in the face."), and 4) psychological abuse (e.g., "Humiliated me, put me down, or ridiculed me."; Bigras et al., 2017b; Godbout et al., 2020a, 2020b). Items are rated on a 7-point Likert scale ranging from 0 – never to 6 – everyday or almost. The instrument showed good internal consistency in the current study (α = .86).

Based on the legal definition of the Criminal Code of Canada Vaillancourt-Morel et al., 2015. CSA was measured with one item assessing any unwanted sexual experience prior to the age of 18 ("Before the age of 18, I had sexual activity with an adult or a peer when I did not want to") and another item asking about any sexual contact prior to 16 years of age with someone who was at least 5 years older and/or in a position of authority ("Before the age of 16, I had sexual activity with an individual 5 years older than me, or who was in position of authority"). The items were coded in a single dichotomous variable (0 = no; 1 = CSA).

Mindfulness

DM was assessed using the 5-item Mindful Attention Awareness Scale (MAAS; Jermann et al., 2009), which measures the propensity to act with awareness in daily life (e.g., "It seems I am 'running on automatic,' without much awareness of what I am doing") on a Likert scale ranging from 1- almost all the time to 6 – almost never. The total score ranges from 5 to 30, with higher scores reflecting higher levels of DM. Internal consistency was excellent in the current sample (α = .91).

Sexual satisfaction

Sexual satisfaction was measured with the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995), which assesses individuals' overall sexual satisfaction using five 7-point dimensions: Good-Bad, Pleasant-

Unpleasant, Positive-Negative, Satisfying-Unsatisfying, and Valuable-Worthless. Total scores range from 5 to 35, with higher scores indicating higher levels of sexual satisfaction. Internal consistency was α = .93 in the current sample.

Sexual self-concept

Two 5-item subscales of the Sexuality Scale (Snell & Papini, 1989) were used. The Sexual Self-Esteem subscale (e.g., "I am a good sexual partner") measures one's tendency to positively evaluate one's ability to relate sexually with others, and the Sexual Depression subscale (e.g., "I am depressed about the sexual aspects of my life") assesses one's feelings of depression regarding the sexual aspects of one's life (Snell & Papini, 1989). Items were rated on a Likert scale ranging from 1- *disagree* to 5- *agree*, with higher scores representing greater sexual self-esteem and sexual depression, respectively. In the present sample, internal consistency was α = .91 for Sexual Self-Esteem, and α = .90 for Sexual Depression.

Sexual dysfunction

Sexual dysfunction was measured using the 7-item Arizona Sexual Experience Scale (ASEX; McGahuey et al., 2000). Items assess different dimensions of sexual functioning (i.e., desire, arousal, erection/lubrication, ability to orgasm, orgasm delay, orgasm satisfaction, and pain) on a 6-point Likert scale (e.g., 1- *not at all* to 6- *extremely*). Higher scores represent higher levels of sexual dysfunction. The ASEX showed good internal consistency in the present sample (α = .82).

Interpersonal conflict

Individuals' propensity to engage in interpersonal conflict was measured with the Inventory of Altered Self-Capacities' 9-item Interpersonal Conflict subscale (IASC; Bigras & Godbout, 2020). Using 5-point Likert scales ranging from 1- *never* to 5- *very often*, participants were asked how often they had experienced a range of conflicts during the past 6 months. Higher scores indicate higher levels of interpersonal conflict. Internal consistency was α = .88 in the present sample.

Relationship status

Participants were invited to report their relationship status. Response options were: "Single, not in a committed relationship," "Single, with one or many casual partner(s)," "In a relationship with a regular partner," "In a common-law union or cohabitation," "Married" or "Other (specify)." Participants reporting being in a relationship with a regular partner, in a common-law union or cohabitation, or married were categorized as "being in a committed relationship."

Dyadic adjustment

Among participants in a committed relationship, dyadic adjustment was measured with the 4-item Dyadic Adjustment Scale (DAS; Sabourin et al., 2005). Participants rated each item (e.g., "Has it ever occurred to you to separate or to end your current relationship?") on a 6-point Likert scale ranging from 0 – *always* to 5 – *never*. Participants also rated their degree of happiness in their current relationship on a 7-point Likert scale ranging from 0 – *extremely unhappy* to 7 – *perfectly happy*. Total scores ranged from 0 to 21. Internal consistency was α = .67.

Statistical analysis

Analyses were conducted with SPSS, version 25. Descriptive analyses were conducted to examine sociodemographic characteristics and variables' distribution.

Hierarchical cluster analysis

To test our first hypothesis (i.e., H_1: Different profiles will be found based on distinct CIT experiences and levels of mindfulness) and identify distinct homogenous profiles among participants, we performed hierarchical cluster analyses. Cluster analysis is considered an excellent method to study heterogeneous populations (Hébert et al., 2006), which was the case with the present sample relative to CIT experiences. Moreover, rather than latent class analysis or latent profile analysis, cluster analysis was selected for this mixed-method study given its exploratory nature and relatively small sample size (Pyburn, 2015). We conducted the analyses using each variable's mean scores. We used the Ward method and squared Euclidian space to identify CIT survivor profiles. The squared Euclidian distance measure was chosen for its capacity to decrease the variance between groups, and its good performance with the Ward hierarchical method (Murtagh & Legendre, 2014). A first round of clustering using other types of CIT (i.e., exposure to physical violence between parental figures, exposure to psychological violence between parental figures, and peer bullying) revealed that these types of CIT did not distinguish groups. Cluster analyses were therefore rerun without them, as was done in previous studies (Hébert et al., 2006). ANOVAs and Lowest Significant Difference (LSD) post-hoc tests, as well as chi-square tests with Bonferroni correction were used to compare the identified profiles on CIT (i.e., psychological and physical neglect, and psychological, physical, and sexual abuse) and dispositional mindfulness.

Sexual and relational outcomes

To test our second hypothesis (i.e., H_2: The profiles will present different levels of sexual and relational well-being, with profiles characterized by higher levels of CIT exposure and lower mindfulness showing a poorer sexual and relational

functioning), groups (profiles) were compared on indicators of sexual and relational well-being (i.e., sexual satisfaction, sexual self-esteem, sexual depression, interpersonal conflict, sexual dysfunction, being in a committed relationship, and, among participants in a relationship, dyadic adjustment). ANOVAs, ANCOVAs, and LSD post-hoc tests were computed to compare the identified profiles on continuous variables, while chi-square tests with Bonferroni correction were conducted to compare profiles on relationship status (i.e., being in a romantic relationship). Age, education, and personal income were included as control variables. Given that only part of the sample experienced CSA and that CSA victims and non-victims were distributed among all profiles, post-hoc analyses were conducted to examine potential differences between CSA victims and non-victims on well-being indicators within profiles (H_3: Within each profile, CSA survivors and non-victims will present statistically similar levels of sexual and relational well-being). Additional independent t-tests were performed for each profile to compare CSA victims and non-victims on all well-being indicators.

Qualitative analysis

Qualitative analyses were conducted to support and enrich our understanding of the identified profiles. A conventional content analysis (Hsieh & Shannon, 2005) was performed on the interview data addressing CIT and DM using NVivo 12. More precisely, 1) the transcripts were first read multiples times to get familiar with the data; 2) the data were then broken into "meaning units" throughout a coding process conducted by a team of six research assistants with the help of a coding grid; 3) a consensus was reached for each code; 4) the data were organized in categories representing each profile; and 5) evocative interview excerpts were presented to complement and illustrate the quantitative results.

RESULTS

Profiles

The final model included three profiles. The final cluster solution was chosen based on the clusters' interpretability and theoretical relevance, which are key factors to consider (Hébert et al., 2006). Four-profile solutions and beyond had too few participants in some of its profiles and had between-profile differences that made little theoretical or empirical sense. For example, two groups were relatively similar in terms of CIT experiences, which made meaningful and useful group comparisons difficult. The final solution is detailed in the following sections, and profile characteristics (i.e., on CIT and DM) are presented in Table 1.

Profile 1: Lower victimization, high mindfulness

The first group ($n = 99$; 39.9% of the sample) was composed of participants presenting the lowest CIT scores across all forms of abuse (i.e., physical and psychological neglect, and sexual, physical, and psychological abuse). This profile presented statistically higher DM scores than the other two profiles. CSA survivors presented similar rates of intrafamilial CSA (43.2%) to that of CSA survivors in profile 2 (46.6%), but lower rates than those in profile 3 (78.8%), $\chi 2$ (2, $n = 174$) = 17.78, $p < .001$, $\varphi = .32$. Interviewed profile 1 participants ($n = 6$) reported feeling safe at home. For example, Ariane mentioned that, despite the occasional conflict, she felt her family environment was secure:

> I got along well with my mother. I got along well with my father too. We had very good relationships. So yes, there were conflicts. There never was aggressivity. For sure, sometimes my mother would raise her voice. My father too, when there were reprimands and all that, but I never felt in danger whatsoever within my family.

Ariane was also non-judgmentally aware of her preferences and boundaries within her intimate relationships (e.g., "At the moment, [blowjobs] are not something I enjoy doing. So usually, I tell my partners when there's something I don't like"), which could reflect higher DM (her mean mindfulness score was 4.80 out of 6).

Table 1. Profile comparisons on CIT and DM.

CIT	Profile 1. Lower victimization, high mindfulness ($n = 99$) M (SD) or %	Profile 2. Psychological victimization, low mindfulness ($n = 116$) M (SD) or %	Profile 3. Multi-victimization, low mindfulness ($n = 77$) M (SD) or %	F	$\eta 2/$ φ	Statistically significant differences (LSD)
Physical neglect (0–6)	0.03 (0.14)	0.21 (0.53)	1.82 (2.04)	67.61***	.32	3 > 1, 2
Psychological neglect (0–6)	0.38 (0.46)	1.49 (1.05)	4.82 (1.08)	532.89***	.79	3 > 2 > 1
Physical abuse (0–4.80)	0.11 (0.18)	0.22 (0.41)	1.38 (1.34)	76.98***	.35	3 > 2, 1
Psychological abuse (0–6)	0.24 (0.47)	0.93 (1.07)	4.59 (1.24)	476.79***	.77	3 > 2 > 1
Childhood sexual abuse (0–1)	52.5%$_c$	74.1%$_a$	92.2%$_b$	34.15***	.34	n/a
Mindfulness (1–6)	5.24 (.54)	3.75 (1.05)	3.69 (1.21)	82.51***	.36	1 > 2, 3

Notes: Scores between parentheses are possible ranges for each presented scale. Means in the same row with different subscript letters differ significantly ($p < .05$) from one another other. Eta Squared ($\eta 2$) was used to report effect sizes on continuous variables. Kramer's phi (φ) was used to report effect sizes on dichotomous variables.
***$p < .001$

Profile 2: Psychological victimization, low mindfulness

Participants in the second group (n = 116; 39.7% of the sample) reported mainly experiencing psychological forms of CIT (i.e., psychological neglect and abuse). This profile was characterized by more experiences of psychological neglect and abuse than profile 1, but a lower prevalence than profile 3. By contrast, this group was significantly less exposed to physical neglect and abuse than profile 3. Profile 2 participants reported more CSA than profile 1's, but less than profile 3's. Though participants in this profile scored higher on psychological trauma than those in profile 1, their mean scores on these variables were lower than participants from profile 3 and compared to the maximum observed scores. This group presented statistically similar DM levels to those of profile 3. Profile 2 CSA survivors presented similar rates of intrafamilial CSA (46.6%) to those of profile 1's (43.2%), but lower than those of profile 3's (78.1%), $\chi2$ (2, n = 174) = 17.78, p < .001, φ = .32.

Interviewed participants (n = 23) tended to attribute their present-day difficulties to CSA. Julie, who was sexually abused by her father's best friend, was close to her mother but fought with her father, whom she also reported being absent during her childhood. In adolescence, she acted out in various ways (e.g., substance use, running away), potentially reflecting avoidance and reactivity:

> When I was younger, I was super rebellious. I used to do drugs. I would always escape through my bedroom window. I would do a lot of stuff like that, and my father never understood why, and it enraged him.

Since individuals who are high in avoidance are typically low in DM, Julie's narrative could partially explain why she presented relatively lower mean DM scores (3.60 out of 6).

Abdoul's narrative shows a similar pattern of sexual and relational difficulties stemming from his inability to recover from CSA. His avoidance of and feelings of insecurity in intimate contexts could reflect lower levels of DM:

> There's a bug somewhere. It takes away my quality of life, and it makes me insecure about my own behaviors. It undermines my self-confidence. Am I going to want to be intimate with someone in a given situation? No, so I do avoid a lot of situations.

Profile 3: Multi-victimization, low mindfulness

The third group (n = 77; 26.4% of the sample) was composed of participants presenting higher CIT scores across all types of abuse compared to those in profiles 1 and 2. This profile was also comprised of the highest proportion of CSA survivors. Participants in this group showed lower DM scores than profile 1 participants but did not significantly differ from those in profile 2. CSA

survivors in this group presented higher rates of intrafamilial CSA (78.1%) compared to CSA survivors from other profiles (i.e., 43.2% in profile 1 and 46.6% in profile 2), $\chi2$ (2, n = 174) = 17.78, p < .001, φ = .32.

Interviewed participants (*n* = 21) reported living in households characterized by insecurity, unpredictability, and severe and diverse forms of abuse. Emmanuel, who was sexually abused by three men – two of which were his father's friends – and whose mother suffered from mental illness, related that his home was not a safe space for him:

> I was never home. It was war at home. I was in and out of foster care. I would go live at a friend's house, on and off. I would go on vacation left and right. And when I stayed with my dad, then it was physical battle.

Carl expressed that his mother was physically, psychologically, and sexually abusive. He reported escaping in elaborate daydreams to survive his painful reality, which are not optimal conditions to develop DM: "I developed a whole um, imaginary lifestyle where I was a girl, a princess, sitting out. I was very lonely, I would always be sitting outside or walking through the woods alone, pretending I was in a different world." (Carl's mean DM score was 3.40 out of 6).

Profile differences on well-being indicators

Table 2 shows statistically significant profile differences on sexual and relational well-being indicators. Participants in profile 1 presented higher sexual and relational well-being than participants in profiles 2 and 3 (i.e., higher levels of sexual satisfaction and lower levels of sexual depression and interpersonal conflict). Profiles 2 and 3 showed similar levels of sexual self-esteem, dyadic adjustment, and sexual dysfunction. Profile 2 reported better sexual and relational well-being than profile 3 in terms of sexual satisfaction, sexual depression, interpersonal conflict, and being in a committed relationship.

Differences between victims and non-victims of CSA within each profile, and profile differences on sociodemographic variables

Results of independent *t*-tests are presented in Table 3. Within profile 2, CSA victims reported significantly poorer relational and sexual well-being in terms of sexual satisfaction, sexual self-esteem, sexual depression, interpersonal conflict, sexual dysfunction, and dyadic adjustment compared to non-victims of CSA. Results also showed statistically significant profile differences regarding sociodemographic variables. Significantly more participants were currently involved a relationship in the low victimization group (profile 1) compared to profile 2 and 3 participants, χ^2 (1, N = 295) = 14.09, *p* < .001, φ = .22. Inversely, significantly fewer participants were currently in a relationship in the multi-victimization group (profile 3) compared to participants in

Table 2. Well-being indicators between groups.

Well-being indicators	Profile 1. Lower victimization, high mindfulness (n = 99)	Profile 2. Psychological victimization, low mindfulness (n = 116)	Profile 3. Multi-victimization, low mindfulness (n = 77)	F	η2/ φ	Statistically significant differences (LSD)
	M (SD) or %	M (SD) or %	M (SD) or %			
Sexual satisfaction (1–7)	5.31 (1.10)	4.48 (1.50)	3.89 (1.65)	22.13***	.13	1 > 2 > 3
Sexual self-esteem (1–5)	3.49 (.89)	3.04 (1.07)	2.96 (1.08)	7.57**	.05	1 > 2, 3
Sexual depression (1–5)	1.85 (.90)	2.56 (1.18)	2.94 (1.37)	20.96***	.13	3 > 2 > 1
Interpersonal conflicts (1–5)	1.81 (.50)	2.24 (.64)	2.47 (.78)	24.40***	.14	3 > 2 > 1
Sexual dysfunction (1–6)	2.70 (.67)	3.01 (.90)	3.07 (.91)	5.68*	.04	2, 3 > 1
In a romantic relationship (0–1)	74.7%$_a$	60.3%$_a$	40.3%$_b$	21.47***	.27	n/a
Dyadic adjustment (0–5.25)	3.80 (1.05)	3.27 (.99)	2.94 (1.00)	9.59***	.10	1 > 2, 3

Notes. Scores between parentheses are possible ranges for each presented scale. Means in the same row with different subscript letters differ significantly ($p < .05$) from one another other. Eta Squared (η2) was used to report effect sizes on continuous variables. Kramer's phi (φ) was used to report effect sizes on dichotomous variables.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 3. T-tests comparing CSA victims and non-victims on well-being indicators within profile 2.

Well-being indicators	CSA Victims		Non-Victims		t-test	Cohen's d
	M	SD	M	SD		
Sexual satisfaction (5–35)	21.16	7.64	26.03	5.80	3.63**	.71
Sexual self-esteem (5–35)	14.47	5.58	17.43	3.96	3.14**	.61
Sexual depression (5–35)	14.02	5.98	9.23	3.97	−4.94***	.94
Interpersonal conflicts (9–45)	20.98	6.10	18.07	4.49	−2.89**	.54
Sexual dysfunction (7–42)	21.91	6.19	18.87	6.11	−2.33*	.49
Dyadic adjustment (0–5.25)	12.53	4.26	14.43	2.77	2.21*	.53

Notes. Scores between parentheses are possible ranges for each presented scale.
*$p < .05$, **$p < .01$, ***$p < .001$

the other profiles, χ^2 (1, $N = 295$) = 16.30, $p < .001$, φ = .24. Lastly, participants in the low victimization group (profile 1) were more educated than those in the other profiles, χ^2 (8, $N = 291$) = 15.73, $p = .046$, φ = .16.

A one-way ANOVA indicated profile differences on age F (2, 1444.16) = 9.11, $p < .001$, η2 = .59, with participants in the multi-victimization group (profile 3) being older ($M = 40.8$, $SD = 13.4$), and participants in the low victimization group (profile 1) being younger

(M = 32.9, SD = 11.2). No group differences were found regarding gender, birthplace, and personal annual income. Accounting for age, education, and personal annual income yielded the same results.

Discussion

The current study examined CIT- and DM-based profiles in a sample of adults reporting various forms and degrees of CIT and compared them on sexual and relational well-being outcomes. Analyses produced three profiles: lower victimization, high mindfulness (profile 1), psychological victimization, low mindfulness (profile 2), and multi-victimization, low mindfulness (profile 3). This study contributes to the trauma literature by exploring CIT experiences with a particular emphasis on CSA as they relate to DM as a key clustering variable. More specifically, results showed that DM was significantly higher in participants who experienced lower levels of victimization, whereas participants reporting psychological victimization and multiple forms of victimization (profiles 2 and 3) both reported comparably lower DM levels. The varying levels of DM across profiles may be understood in light of betrayal trauma theory (Freyd et al., 2007), which posits that when a child is betrayed by a trusted and needed figure, they may dissociate to cope with the trauma and preserve the relationships upon which they depend. While such a response to CIT may be adaptive, it nonetheless results in low DM.

Sexual and relational well-being differences were also found between profile 2 CSA survivors and non-victims. CSA survivors who reported having experienced concomitant physical and psychological victimization were more likely to report lower sexual satisfaction and self-esteem, and higher sexual depression, which highlights the impact of cumulative trauma. CSA, which is a particularly intrusive form of abuse harming the victim's body and integrity, might also result in specific, negative sexual and relational consequences. These findings shed additional light on victimization profiles and on their respective patterns of sexual and relational outcomes in adulthood. CSA survivors were unevenly distributed across all three profiles, with higher numbers grouped in the psychological victimization and the multi-victimization profiles, who also reported higher CIT exposure, both in type and in frequency. This finding is consistent with past research demonstrating that CSA was linked to the experience of cumulative CIT (Finkelhor et al., 2011).

The findings also reveal that the psychological victimization and the multi-victimization groups presented poorer sexual and relational well-being compared to the low victimization group, even though the latter also included CSA survivors. This supports the idea that CSA alone might be insufficient to explain sexual and relational difficulties in adulthood (H_2), and that coping trajectories also need to be examined. Indeed, the combination of CSA with other forms of CIT appeared to be more

detrimental to survivors' sexual and relational well-being. Yet, since many CSA survivors have also experienced other CIT, researchers might overlook other protective factors regarding sexual and relational well-being. That half of profile 1 (low victimization group) participants were CSA survivors (52.5%) presenting generally greater sexual and relational well-being than profile 2 and 3 participants suggests that many CSA survivors can experience relatively healthy, functioning, and fulfilling sexual and romantic relationships.

Previous studies have found a buffer effect of support following disclosure of CIT (e.g., Therriault et al., 2020), reflecting profile 1's (low victimization, high mindfulness) more positive sexual and relational outcomes. Such findings suggest that living in a supportive and protective home may have promoted the healthy processing and metabolization of trauma, in turn fostering survivors' sexual and relational well-being.

Profiles presented distinct levels of relational and sexual well-being in adulthood (H$_1$), which highlight the need to account for CIT and CSA profiles in research and practice. Not doing so could lead to the neglect of significant trauma-related outcomes and assessing different CIT patterns would ensure that survivors' specific needs and realities are met and understood. One of the present study's strengths is its inclusion of psychological trauma – a type of trauma that is often considered to be less severe than others and is consequently typically overlooked in studies examining the impact of trauma on sexual and relational outcomes in adulthood. By also examining psychological traumas, the present research contributes to closing a gap in the trauma literature by providing a more comprehensive portrait of different trauma survivor profiles.

Our study also supports the idea that CIT survivors may not have the same opportunities to develop DM from an early age as those without CIT (Godbout et al., 2020b). In that aspect, it is important to note that, even among participants reporting the least trauma (profile 1), mean DM levels were relatively low. A possible explanation for this finding might be that, although our selected measure assesses DM, non-practitioners of mindfulness may present lower scores on this measure than practitioners (Brown & Ryan, 2003), something the current study did not investigate.

Our findings echo those of previous studies having investigated CIT profiles (Debowska et al., 2017; O'Donnell et al., 2017), and having showed a cumulative, negative effect of CIT on sexual well-being in adulthood (Lacelle et al., 2012). Our data also suggest that adverse childhood experiences (i.e., CIT and other difficulties such as mental illness, substance abuse, parental separation, or divorce) may lead to long-term suffering, as reflected in participants' lower relational and sexual well-being and in previous studies (Hughes et al., 2017).

Limitations

Having included a high proportion of CSA survivors and non-victims in analyses can be considered both a strength and a limitation. These participants are represented in all three observed profiles, highlighting that some CSA survivors might experience higher sexual and relational well-being in adulthood than others. However, the results should be interpreted with caution, as participants may differ from the general population. Secondly, the selected relationship satisfaction measure did not present good internal consistency in our sample. Thirdly, as hierarchical cluster analysis provided general tendencies pertaining to CIT experiences and dispositional mindfulness, outliers' experiences might not be adequately represented in our findings (e.g., participants with high victimization and high mindfulness). Therefore, future qualitative analyses should aim to deepen our understanding of such profiles in order to capture a more nuanced overview of this phenomenon. Lastly, creating profiles based on variables with different scales could represent a limitation in hierarchical cluster analysis (Murtagh & Legendre, 2014), though we standardized our data to help compensate for this bias.

Future research and clinical implications

Examining distinct samples of CSA or CIT survivors from the general population could shed additional light on trauma survivors' levels of sexual and relational well-being. Results could be replicated using other case-centered analyses, such as latent class analyses, in a more representative sample of the general population. Longitudinal research investigating CIT survivors' experiences and DM could improve our understanding of mindfulness and how it is developed concurrently with CIT. Further studies should also include other measures of sexual and relational well-being to capture the complexity of this area of functioning in CIT survivors. Finally, other interpersonal trauma could be included in future studies (e.g., revictimization in adulthood) to evaluate the potential cumulative effect of traumatic experiences and low DM on adult relationships and sexuality.

Our study highlights the need for practitioners to thoroughly assess individuals' CIT history and DM to better evaluate their potential impact on their sexual and relational well-being. Our findings, along with those of previous studies (Armour et al., 2014; Shin et al., 2018), indicate that physical trauma tends to be experienced in tandem with psychological trauma, which are together more likely to lead to lower sexual satisfaction, more sexual depression, and more interpersonal conflict than in cases in which only psychological trauma was experienced. When promoting sexual and relational well-being in CSA survivors, practitioners should assess CIT and DM to guide their interventions. For instance, CSA survivors who have experienced few other types of CIT might not present as many sexual and

relational difficulties as CSA survivors with cumulative physical or psychological traumas, since the negative effect of CSA is significantly augmented when co-occurring with other forms of CIT (Vaughn et al., 2015). Our findings point to the need to promote awareness regarding the deleterious effects of psychological trauma, as it may be even more predictive of sexual and relational difficulties than physical trauma. Partner support might be one of the main intervention tools to promote among practitioners, as secure intimate relationships have been found to promote healing and growth, and to buffer sexual difficulties in CSA survivors (Baumann et al., 2021; Guyon et al., 2020).

Conclusion

CIT and DM have multiple effects on relational and sexual well-being. The present study identifies distinct trauma and dispositional mindfulness profiles presenting distinct relational and sexual outcomes that could guide practitioners in designing tailored interventions.

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Disclosure statement

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Ethical Standards and Informed Consent

All procedures followed were in accordance with the ethical standards of the Université du Québec à Montréal's committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

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