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Risk Factors for Sexual Revictimization and Dating Violence in Young Adults with a History of Child Sexual Abuse

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Abstract

Interpersonal revictimization, through sexual violence and psychological or physical dating violence, is one of the many consequences of childhood sexual abuse (CSA). This study examined how childhood maltreatment, sociodemographic characteristics, mental health, relational factors, and community factors are associated with 1) sexual revictimization 2) psychological dating violence victimization, and 3) physical dating violence victimization in a sample of young adults reporting a history of CSA. A sample of 190 young adults (18–25 y.o.) with self-reported experiences of CSA completed an online survey measuring childhood maltreatment (e.g. neglect, physical abuse, witness to domestic violence), sociodemographic characteristics (e.g. material deprivation, education), mental health (dissociation, posttraumatic stress symptoms), relational factors (e.g. insecure attachment style), and community factors (e.g. neighbourhood disadvantage). Hierarchical logistic regressions indicated that once all risk factors were entered in the models, PTSD was positively associated with psychological dating violence, while dissociation was positively associated with physical dating violence. Physical abuse in childhood was positively associated with sexual revictimization. The present study shows the importance of simultaneously considering the impact of multiple characteristics surrounding CSA survivors when evaluating risks of revictimization. Additionally, it highlights the importance of providing CSA survivors with adequate mental health support for trauma-related disorders, as it may be crucial to prevent revictimization.

Keywords Child sexual abuse · Childhood maltreatment · Sexual revictimization · Physical dating violence · Psychological dating violence

Child sexual abuse (CSA), a pervasive problem in society, is defined by the World Health Organization (WHO) as "the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society" (p. 15; World Health Organization, 1999). One meta-analysis, which included over 300 international studies, found that the worldwide prevalence of CSA is 18–20% for women and 8% for men (Stoltenborgh et al., 2011). Another meta-analysis including 24 countries found a prevalence of 8–31% for girls and 3–17% for boys (Barth et al., 2013). CSA is associated with several negative health outcomes, such as lifetime diagnoses of posttraumatic stress disorder (PTSD) (Amado et al., 2015; Fergusson et al., 2013), anxiety (Amado et al., 2015; Fergusson et al., 2013), depression (Fergusson et al., 2013), dissociation symptoms (Ensink et al., 2017; Trickett et al., 2011) and interpersonal problems (Brenner et al., 2019; Sullivan et al., 2020). CSA is also associated with future risk of sexual victimization (Briere et al., 2020).

Indeed, sexual revictimization, defined as two or more acts of sexual victimization occurring at different times (Messman & Long, 1996), is a documented outcome of CSA. Sexually abused children, compared to non-sexually abused children, are more likely to reexperience an act of sexual victimization later on in life with rates nearing 50% (Briere et al., 2020; Walker et al., 2019). Unfortunately, CSA also puts individuals at risk of experiencing other forms of abuse such as psychological, physical and/or sexual dating violence (Hébert et al., 2020). The current study aims to document risk factors associated with interpersonal revictimization (i.e., sexual abuse, dating violence) in young adults reporting a history of CSA using an ecological perspective.

Theoretical Model of Revictimization: An Ecological Approach

Ecological models of victimization conceptualize potential risk and protective factors that may interact with one another to understand the etiology of victimization (e.g., Belsky, 1980; Bronfenbrenner, 1977; Dahlberg & Krug, 2002). One such model, proposed by Dahlberg and Krug (2002), explains how ecological factors from four levels, arranged from the more proximal to the more distal from the individual, may interact with one another to impact one's risk of being subjected to interpersonal violence. The individual level of this model examines personal characteristics, such as gender, mental health, and previous history of violence. The relational level documents how close relationships may impact one's risk of victimization (e.g. living with an abusive caregiver). The community level considers the characteristics of a community that can increase one's risk of victimization (e.g. criminality levels, neighbourhood disadvantage). Finally, the societal level concerns norms that more broadly influence whether violence is tolerated or not (e.g. cultural norms around the use of violence to resolve conflicts) (Dahlberg & Krug, 2002). According to Dahlberg and Krug (2002), risk and protective factors may be more specific to different forms of violence (e.g. physical violence, sexual violence, etc.), supporting separate analyses. Another assumption of ecological models of victimization is that more proximal levels (e.g. individual vs. community level) may be more influential than distal levels, as individual characteristics such as mental health, education, and income are likely to have an influence on the more distal factors such as relationship and community characteristics (Belsky, 1980). Notwithstanding this assumption, the complex interactions between the different ecological levels warrant an examination of risk and protective factors from multiple levels in order to effectively prevent (re)victimization. Therefore, risk factors from three out of the four levels of Dahlberg and Krug's (2002) model were considered in the current study aiming to determine their relative role in the interpersonal revictimization of CSA survivors: 1) individual-level (previous experiences of childhood maltreatment, mental health and sociodemographic characteristics), 2) relational-level (attachment styles), 3) and community-level (neighbourhood index).

Individual Factors Predicting Revictimization: Empirical Findings

History of Childhood Maltreatment

Individuals who are exposed to CSA are also more likely to have experienced other forms of CM such as neglect, physical abuse, and psychological abuse (Pérez-Fuentes et al., 2013). Previous studies have shown that cumulative trauma experiences in childhood further increase the risks of revictimization (Miron &

Orcutt, 2014; Scoglio et al., 2019). Experts have found CSA to be the most impactful childhood adversity experience for women, and that it interacts with other forms of adversity to exponentially predict adult psychological disorders (Putnam et al., 2013). It was also found to be one of the most impactful forms of adversity for men (Putnam et al., 2013). Thus, theoretical and empirical evidence converge to support the consideration of other forms of CM in the context of CSA survivors' adult revictimization.

Mental Health

Mental health issues may also increase the likelihood of interpersonal revictimization in survivors of CSA (Madruga et al., 2017; Scoglio et al., 2019). For example, it was found that the relationship between CSA and forcible sexual assault in adulthood was significantly mediated through PTSD symptoms (Mokma et al., 2016). Additionally, among individuals with a history of CSA, PTSD was found to be a risk factor for sexual revictimization (Scoglio et al., 2019).

A similar association between dating violence and PTSD has also been found (Brooks-Russell et al., 2013; Mokma et al., 2016) In addition to PTSD, dissociation has been associated with an increased risk of sexual revictimization (Bockers et al., 2014; Krause-Utz et al., 2021). Dissociation mediated the association between early abusive experiences and dating violence revictimization in adulthood (Iverson et al., 2013; Zamir et al., 2018). As such, consistent with Dahlberg and Krug's model, empirical findings show that for individuals with a history of CSA, both PTSD and dis- sociation may be risk factors for sexual revictimization and subsequent dating violence.

Sociodemographic Characteristics

Sociodemographic characteristics are also associated with interpersonal revictimization. For example, in a sample of sexually abused individuals, women with lower incomes (e.g., < $20,000) were more likely to be sexually revictimized (Mason et al., 2009). Additionally, girls with a history of CSA and individuals from ethno-racial minorities (e.g., African American) with a history of CSA, were found to be at a higher risk of experiencing sexual revictimization (Papalia et al., 2020; Pittenger et al., 2018). Particularly, one study of sexually abused children found that in comparison to boys, girls were 130% more likely to be sexually revictimized; European American children, compared to ethno-racial minority children, were 34% less likely to be sexually revictimized (Pittenger et al., 2018). Thus, gender and ethnicity characteristics play a role in the risks of victimization.

Relational Factors Predicting Revictimization: Empirical Findings

Attachment styles can influence one's patterns of inter-personal interactions (Mikulincer & Shaver, 2012) and has been associated with revictimization (Reese-Weber & Smith, 2011; Stover et al., 2018). For example, in one study of female CSA survivors, an association was found between anxious attachment and sexual revictimization (Reese-Weber & Smith, 2011). In addition, it was found that both anxious and avoidant attachment moderated the association between childhood maltreatment and dating violence (Stover et al., 2018). CSA survivors exhibit higher levels of both anxious and avoidant attachment compared to individuals with no history of CSA (Brenner et al., 2019). As a result, these individuals may be projecting insecure attachment orientations (e.g., fear of rejection and/or abandonment, emotionally distant, dependent) onto others, and putting themselves in situations (e.g., seeking out multiple partners) that may increase their chances of experiencing an act of sexual revictimization (Gold et al., 1999). Thus, both empirical and theoretical evidence support the importance of relational factors in the risk of (re)victimization.

Community Factors Predicting Revictimization: Empirical Findings

According to ecological models, community-level factors (e.g., neighborhood disadvantage, rates of violent crimes in the community, etc.) may also present as risks factors (Dahlberg & Krug, 2002). There is some

empirical evidence for community factors playing a part in victimization and revictimization (Papalia et al., 2020; Pittenger et al., 2018). For example, a study found that sexually abused children living in neighborhoods with low vs. high percentages of high school graduates were more likely to be revictimized (Pittenger et al., 2018). Additionally, violence occurrences have been reported in higher numbers in lower to middle- income areas compared to higher-income areas (Dahlberg & Krug, 2002).

To summarize, previous empirical studies have revealed that factors related to CSA survivors' mental health, socio-demographic status, attachment styles, and neighbourhood can represent risk factors for adulthood interpersonal revictimization. However, much of the literature fails to include other forms of CM as potential risk factors despite previous findings supporting their relevance (e.g., Scoglio et al., 2019). Furthermore, few studies have adopted an ecological perspective by considering simultaneously risk factors at multiple levels of the social ecology, therefore failing to document the relative contribution of known risk factors to the interpersonal revictimization of CSA survivors. This study will address some of these gaps.

Current Study

This study aims to shed light on the relative role of multi-level risk factors in the interpersonal revictimization of young adults with a history of CSA using an ecological perspective (Dahlberg & Krug, 2002). Based on previous findings, the study will examine how 1) individual-level characteristics, namely previous history of CM (neglect, physical abuse, psychological abuse and witness to domestic violence), mental health (PTSD symptoms and dissociation), and socio-demographic factors (gender, ethnicity, material deprivation, education); 2) relational characteristics (anxious and avoidant attachment); and 3) community-level characteristics (neighbourhood disadvantage), increase the risk of sexual revictimization, psychological dating violence victimization, and physical dating violence victimization for CSA survivors.

Method

Participants

The sample consisted of 190 young adults who reported experiences of CSA. Sociodemographic characteristics of the participating young adults are presented in Table 1. A majority of participants in the sample identified as women (*n* = 157), were white (*n* = 125) and had experienced some form of material deprivation (*n* = 133).

Procedure

The initial sample consisted of 809 young adults (18–25 years old; *M* = 21.21, *SD* = 2.21) recruited online. Recruitment took place across Canada through online ads shared on various platforms such as social media pages (e.g., Facebook groups targeting mothers, university students, or individuals living in disadvantaged neighborhoods), universities, and non-profit organizations (e.g., homeless shelters, programs for young mothers, after school pro- grams). Both English and French-speaking individuals were included. Before participants began the questionnaire through a secure online survey platform, they were directed to an informed consent form. All participants were entered into a draw for a chance to win one of two iPads. Procedures were approved by the Research Ethics Board of the primary researcher's institution. Following various measures to screen out careless responders (e.g., percentage of completion, time of completion less than half the modal time, incorrect answers to at least 3/7 directed questions), 242 participants were excluded. Furthermore, participants must have indicated experiencing sexual abuse before the age of 18, as measured by the Early Trauma Inventory Self-Report-Short Form (ETISR-SF; Bremner et al., 2007), to meet the inclusion criteria. Specifically, participants must have endorsed at least one out of the six items from the ETISR-SF sexual abuse subscale (e.g. "Did anyone ever have genital sex with you against your will", "Did you ever experience someone rubbing their genitals against you against your will?"). Screening for this inclusion criteria resulted in an additional 377 people being excluded.

Table 1 Descriptive statistics and chi-squares for sociodemographic variables and study's outcomes

Variable	Total	Sexually Revictimized		Psychologically abused in adulthood		Physically abused in adulthood	
	n	No	Yes	No	Yes	No	Yes
Ethnicity (n = 188)							
White	125	35.5%	64.5%	36.4%	63.6%	67.3%	32.7%
Black	12	40.0%	60.0%	22.2%	77.8%	55.6%	44.4%
Asian	23	52.2%	47.8%	52.9%	47.1%	94.1%	5.9%
Other ethnicities	28	51.9%	48.1%	55.0%	45.0%	95.0%	5.0%
Gender (n = 190)							
Women and gender minorities	161	40.6%	59.4%	42.5%*	57.5%*	79.1%*	20.9%*
Men	29	39.3%	60.7%	20.8%*	79.2%*	41.7%*	58.3%*
Material Deprivation (n = 190)							
No (< 1)	57	38.2%	61.8%	46.0%	54.0%	86.0%*	14.0%*
Yes (≥ 1)	133	41.4%	58.6%	36.1%	63.9%	67.6%*	32.4%*
Education (n = 189)							
High School	51	52.0%	48.0%	44.7%	55.3%	76.3%	23.7%
CEGEP	35	45.7%	54.3%	37.9%	62.1%	79.3%	20.7%
Undergraduate	88	32.1%	67.9%	38.5%	61.5%	67.9%	32.1%
Graduate	15	35.7%	64.3%	30.8%	69.2%	84.6%	15.4%
Neighborhood index (n = 173)							
Lowest quintile	47	37.0%	63.0%	45.0%	55.0%	82.5%*	17.5%*
Medium–low quintile	25	54.2%	45.8%	45.0%	55.0%	95.0%*	5.0%*
Middle quintile	25	29.2%	70.8%	42.9%	57.1%	85.7%*	14.3%*
Medium–high quintile	42	45.2%	54.8%	38.9%	61.1%	63.9%*	36.1%*
Highest quintile	34	34.4%	65.6%	28.6%	71.4%	60.7%*	39.3%*

"Gender minorities" includes participants that selected "Female", "Non binary" and "Gender-Fluid" as their gender. "Other ethnicities" include participants who identify as "Hispanic"; "Native American"; "Middle Easterner", "Mixed Race" or "Other not otherwise specified"

*Statistically significant ($p < 0.05$)

Measures

Childhood Maltreatment

The ISPCAN Child Abuse Screening Tool (ICAST; ISP- CAN, 2015) was used to assess experiences of neglect in childhood. This is a 5-item measure where participants respond in a dichotomous format (yes/no) to items such as: "Have you ever been hurt or injured because no adult was supervising you?". A dichotomous score was used in the current study, with "0" = No neglect, and "1" = Neglect (at least one item endorsed by the participant).

The Early Trauma Inventory Self-Report-Short Form (ETISR-SF; Bremner et al., 2007) was used to document experiences of physical (5 items), psychological (5 items), and sexual abuse (6 items) before the age of 18. Sample items are: "Were you ever punched or kicked by a parent or caregiver" and "Were you often put down or ridiculed by a parent or a caregiver?". For each scale, a dichotomous scoring system was used, with "0" = No abuse, and "1" = Abuse (at least one item endorsed by the participant).

Exposure to domestic violence was measured using a modification of the Short-Revised Conflict Tactics Scale (CTS2S) (Straus & Douglas, 2004). The 3-item measure was used to assess whether participants witnessed domestic violence in their childhood: "Have you ever seen your mother or father shoved, hit, or throw things at their partner?". A dichotomous scoring system was used, with "0" = Never happened, and "1" = Happened.

Demographics

A sociodemographic questionnaire was used to gather general information (e.g., age, gender, annual income, ethnicity, education). To document the household levels of financial comfort, the Index of Material Deprivation (IMD; Statistics Canada, 2013) was used. Young adults were asked 17 questions to assess their ability to afford basic necessities (yes/no answer format), for example, “Can you afford to pay your bills on time?”. Answers to these questions were added to obtain a count score ranging from 0–17 unmet needs (α = .817).

Mental Health

Self-reported PTSD symptoms were measured using the 20-item PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013a, b). Respondents were assessed on symptoms of reexperiencing, avoidance, negative alterations in cognitions and mood, and hyperarousal (e.g., “In the past month, how much were you bothered by: repeated, disturbing, and unwanted memories of the stressful experience?”). All items used a 5-point Likert-type scale (0 = Not at all to 4 = Extremely). In the current study, the PTSD checklist total sum score ranging from 0–80 was used (α = .949).

The Dissociative Experiences Scale Taxon (DES-T; Waller et al., 1996) is an 8-item scale measuring the occurrence of various dissociative experiences with questions such as: “Some people have the experience of finding themselves in a place and having no idea how they got there.”, where participants needed to indicate on a scale from 0% of the time to 100% of the time how often they experience this event. A total score ranging from 0–100 was calculated using the mean percentage of the scores from each item (α = .919).

Romantic Attachment

The Experiences in Close Relationships (ECR-12; Lafontaine et al., 2015) was used to measure romantic attachment styles. Participants rated their level of agreement with the 12-items using a 7-point Likert-Type scale (1 = Disagree strongly to 7 = Agree strongly). The anxious attachment scale included items such as: “I worry that romantic partners won’t care about me as much as I care about them.”. The avoidant attachment scale included items such as: “I don’t feel comfortable opening up to romantic partners.”. A mean score ranging from 1 to 7 was calculated for both avoidant attachment (α = .876) and anxious attachment (α = .832).

Neighbourhood Disadvantage

An area-based socioeconomic tool was used to determine the neighbourhood disadvantage index from the first three digits of participants’ postal codes (Statistics Canada, 2017). This allows the conversion of postal codes in one of five quintiles using a conversion file. The quintiles are based on income-related inequalities using an area-level approach and are categorized as follows: lowest quintile, medium–low quintile, middle quintile, medium–high quintile and highest quintile.

Sexual Revictimization in Adulthood

To document participants’ sexual revictimization status, two items from the Life events checklist for DSM-5 (LEC-5; Weathers et al., 2013a, b) and two items from the Conflict Tactics Scales were used (CTS; Straus & Douglas, 2004). Participants needed to indicate whether they experienced this event after the age of 18. The two items from the LEC- 5: “Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)” and “Other unwanted or uncomfortable sexual experience”, were each given a score of 0 (Didn’t happen to me) or 1 (Happened to me). For the two CTS items (e.g. “My partner used force (like hitting, holding down, or using a weapon) to make me have sex.”), each item was given a score of 0 (This has never happened), or a score of 1 (It did happen). Scores for all 4 items were added together and a score of 0 was recoded as “0” (no sexual revictimization) and a score of ≥ 1 was recoded as “1” (sexual revictimization). Sexual revictimization scores were available for 179 participants (94.2% of the sample).

Dating Violence in Adulthood

Two subscales of the Conflict Tactics Scales (CTS2S; Straus & Douglas, 2004) were used to assess psychological and physical dating violence. The psychological abuse scale consists of two items (e.g., "My partner insulted or swore or shouted or yelled at me."). The physical abuse scale also consists of two items. (e.g. "My partner pushed, shoved, or slapped me"). For both scales, a dichotomous lifetime format (Never happened/ Happened) was used. Individuals who indicated in the background information questionnaire that they had never been in a romantic relationship did not complete this measure, resulting in scores for both psychological abuse and physical abuse being available for 158 participants (78.9% of the sample).

Data Analyses

Data analyses were done in two steps using SPSS 27. First, descriptive and preliminary analyses were conducted (chi-square tests and bivariate correlations). Gender, due to extremely low counts in non-binary categories, was recoded into two categories: the "women and gender minority" group and the "men" group. Gender minorities were combined with women, rather than men, because evidence suggests that individuals from these groups are more vulnerable to revictimization after CSA (McCauley et al., 2018; Mokma et al., 2016). Variables that were significant in the preliminary analyses were retained for the main analyses where independent variables were divided into three blocks reflecting their ecological levels. In line with the assumption of ecological models of victimization, the blocks were arranged from characteristics that are more distal to more proximal to the individual. Proximal characteristics are characteristics that closely and more directly influence an individual's experience (e.g. mental health) and that in turn may alter how one relates to distal characteristics surrounding them. As such, the blocks were arranged to start with community-level factors (neighbourhood disadvantage), followed by relational-level factors (anxious romantic attachment and avoidant romantic attachment), then individual-level factors (CM, mental health and demographics). A hierarchical logistic regression analysis was conducted for each of the three outcomes: 1) sexual

revictimization, 2) psychological dating violence, and 3) physical dating violence.

Results

Preliminary Analyses

Descriptive statistics, correlations and chi-squares are presented in Tables 1 and 2. Overall, most CM types correlated positively with sexual revictimization, psycho-logical dating violence, and physical dating violence in adulthood except for childhood physical abuse and sexual revictimization. Childhood psychological abuse was not related to any adulthood victimization variable. Most mental health variables correlated positively with adulthood victimization. Attachment variables were positively correlated to adulthood victimization. Neighbourhood disadvantage was positively correlated with physical dating violence.

Chi squares revealed a significant association between gender and psychological and physical dating violence and between material deprivation and physical dating violence. Men vs. women/gender minorities and individuals with more material deprivation were more likely to experience revictimization. Education and ethnicity were not significantly associated with adulthood sexual victimization, physical, or psychological dating violence. Based on these preliminary findings, significant individual-level variables, namely CM variables (neglect, physical abuse, and witness to domestic violence), mental health variables (PTSD symptoms and dissociation) and demographic variables (gender and material deprivation);

relational-level variables (anxious and avoidant attachment); and the community-level variable (neighborhood disadvantage), were retained for the main analyses.

Table 2 Means, standard deviations and correlations for study's variables. (Individual and relational)

Variable	M (SD)	1.	2.	3.	4.	5.	6.	7.	8.
1. PTSD symptoms (n = 190)	32.626 (17.070)	-	.547**	.246**	.321**	.058	.405**	.365**	.279**
2. Dissociation (n = 188)	25.569 (24.580)		-	.195*	.162*	.200**	.381**	.514**	.142
3. Avoidant attachment (n = 158)	2.907 (1.268)			-	.096	.063	.143	.157*	.211*
4. Anxious attachment (n = 158)	4.795 (1.255)				-	.150	.238**	.152	.280**
5. Neighborhood Disadvantage (n = 173)	2.920 (1.494)						.109	.255**	.020
6. Psychological abuse in adulthood (n = 158)	0.608 (0.489)						-	.484**	.276**
7. Physical abuse in adulthood (n = 158)	0.2658 (0.443)							-	.228**
8. Sexual revictimization (n = 150)	0.600 (0.492)								-

*$p < 0.05$; **$p < 0.01$

Sexual Revictimization in Adulthood

Results for the hierarchical logistic regressions for sexual revictimization are presented in Table 3. For the first block, the addition of neighborhood disadvantage did not result in a significant improvement in fit relative to a null/intercept-only model. In the second block, the addition of the relational variables (avoidant and anxious attachment) significantly contributed to the model and anxious attachment was positively associated with sexual revictimization. In the third and final block, the addition of the individual-level variables (childhood maltreatment, mental health, and demographic variables) significantly contributed to the model and showed an increase in explained variance of approximately 15%, as well as an overall classification accuracy of 75.2%. Once all variables were added to the model, only physical abuse remained significantly associated with sexual revictimization; CSA survivors that were also physically abused in childhood were 4 times more likely to be sexually revictimized (OR = 4.019).

Psychological Dating Violence in Adulthood

Results for the hierarchical logistic regressions for psychological dating violence are presented in Table 4. For the first block, the addition of neighborhood disadvantage did not result in a significant improvement in fit relative to a null/intercept-only model. In the second block, the addition of the relational variables (avoidant attachment and anxious attachment) significantly contributed to the model and anxious attachment was positively associated with psychological dating violence. In the third and final block, the addition of individual-level variables (childhood maltreatment, mental health, and demographic variables) significantly contributed to the model with an increase in explained variance of approximately 22%. The over-all classification accuracy was 68.5%. Once all variables were added to the model, only PTSD symptoms remained positively associated with psychological dating violence (OR = 1.035).

Physical Dating Violence in Adulthood

Results for the hierarchical logistic regressions for physical dating violence are presented in Table 5. For the first block, the addition of neighbourhood disadvantage resulted in a significant improvement in fit relative to a null/intercept-only model. Neighbourhood disadvantage was positively associated with physical dating violence. In the second block, the addition of the relational variables (avoidant attachment and anxious attachment) did not significantly contribute to the model. In the third and final block, the addition of individual-level variables (childhood maltreatment, mental health, and demographic variables) significantly contributed to the model and showed an increase in explained variance of approximately 30%. The overall

classification accuracy reached 84.6%. Once all variables were added to the model, only dissociation remained positively associated with physical dating violence (OR = 1.031).

Table 3 Regression model for sexual revictimization outcome

Model predictors	Block χ^2	*df*	Nag R^2	*B*	SE *B*	*p*	Exp *(B)*	95% C.I. for EXP *(B)*	
								Lower	Upper
Block 1	.075	1	.001			.785			
Constant				.565	.392	.150	1.760		
Neighborhood Disadvantage				.032	.119	.785	1.003	.818	1.304
Block 2	14.815	2	.139			<.001			
Constant				-2.209	.864	.011	.110		
Neighborhood Disadvantage				-.058	.127	.651	.944	.736	1.211
Avoidant attachment				.322	.161	.045	1.381	1.008	1.892
Anxious attachment				.460	.160	.004	1.583	1.157	2.166
Block 3	18.355	7	.291			.010			
Constant				-2.909	1.259	.021	.055		
Neighborhood Disadvantage				-.120	.150	.424	.887	.661	1.190
Avoidant attachment				.288	.190	.130	1.334	.919	1.936
Anxious attachment				.361	.187	.054	1.434	.994	2.070
Neglect				-.492	.465	.290	.611	.246	1.520
Physical abuse				1.391	.529	.009	4.019	1.424	11.334
Witness to domestic violence				-.331	.488	.498	.718	.276	1.868
Material deprivation				.002	.085	.984	1.002	.847	1.184
Gender				.131	.693	.850	1.140	.293	4.434
Dissociation				.014	.014	.316	1.014	.987	1.041
PTSD symptoms				.031	.017	.063	1.031	.998	1.065

Nag R^2 Nagelkerke R^2, *C.I.* Confidence interval

Table 4 Regression model for psychological dating violence outcome

Model predictors	Block χ^2	*df*	Nag R^2	*B*	SE *B*	*p*	Exp *(B)*	95% C.I. for EXP *(B)*	
								Lower	Upper
Block 1	2.328	1	.022			.127			
Constant				-.131	.376	.728	.878		
Neighborhood Disadvantage				.175	.115	.129	1.191	.950	1.493
Block 2	9.525	2	.107			.009			
Constant				-2.282	.827	.006	.102		
Neighborhood Disadvantage				.117	.120	.329	1.124	.889	1.423
Avoidant attachment				.165	.143	.248	1.180	.891	1.562
Anxious attachment				.390	.147	.008	1.478	1.107	1.972
Block 3	28.313	7	.331			<.001			
Constant				-1.505	1.160	.194	.222		
Neighborhood Disadvantage				.137	.145	.344	1.147	.863	1.562
Avoidant attachment				-.133	.169	.432	.875	.628	1.220
Anxious attachment				.189	.170	.266	1.208	.866	1.687
Neglect				-.615	.432	.155	.540	.232	1.261
Physical abuse				-.040	.465	.932	.961	.387	2.389
Witness to domestic violence				-.219	.466	.638	.803	.322	2.003
Material deprivation				.175	.089	.050	1.191	1.000	1.419
Gender				-.288	.738	.697	.750	.176	3.188
Dissociation				.010	.013	.462	1.010	.984	1.067
PTSD symptoms				.034	.016	.028	1.035	1.004	1.067

Nag R^2 Nagelkerke R^2, *C.I.* Confidence interval

Discussion

This study aimed to document the role of multi-level risk factors in the sexual revictimization and psychological and physical dating violence of young adults with a history of CSA using an ecological perspective (Dahlberg & Krug, 2002). Results indicated that once all factors were entered, the model for sexual revictimization explained 29.1% of the variance and only physical abuse remained significant. For psychological dating violence, the model explained 33.1% of the variance and only PTSD symptoms remained significant. Finally, our complete model explained 43.5% of the variance for physical dating violence and only dissociation remained significant. Hence, while the consideration of factors at several ecological levels resulted in important proportions of the phenomenon of the interpersonal revictimization in CSA survivors being explained, few variables exert a significant influence on their own once all factors are accounted for, and the ones that do all belong to the individual level. This is consistent with the assumption of ecological models that individual-level factors are more influential in interpersonal (re)victimization. The findings of this study contribute to the literature by considering the relative contribution of multi-level risk factors simultaneously for different types of inter-personal revictimization in survivors of CSA.

Child Physical Abuse and Sexual Revictimization

Our finding on the association between childhood physical abuse and sexual revictimization is consistent with previous research (Barrios et al., 2015; Miron & Orcutt, 2014). Research has suggested that individuals with a history of childhood physical abuse are more likely to use sexual behaviours as a coping strategy (e.g., Messman-Moore et al., 2010; Walsh et al., 2014). Specifically, CSA survivors who have also experienced childhood physical abuse are more likely to engage in risky (e.g., unprotected sex) and impulsive (e.g., casual sex) sexual behaviours (Walsh et al., 2014). Moreover, children with a history of physical abuse present with greater emotional dysregulation than non-abused children (Teisel & Cicchetti, 2008) and appear to use sexual

behaviors as a way to regulate emotions (Messman-Moore et al., 2010). These characteristics of physical and sexual abuse survivors might, unfortunately, increase their risk of being sexually revictimized.

Table 5 Regression model for physical dating violence outcome

Model predictors	Block χ^2	*df*	Nag R^2	*B*	SE *B*	*p*	Exp *(B)*	95% C.I. for EXP *(B)*	
								Lower	Upper
Block 1	7.678	1	.078			.006			
Constant				-2.326	.520	< .001	.098		
Neighborhood Disadvantage				.377	.142	.008	1.457	1.104	1.924
Block 2	5.603	2	.132			.061			
Constant				-4.423	1.118	< .001	.012		
Neighborhood Disadvantage				.352	.146	.016	1.422	1.068	1.893
Avoidant attachment				.232	.163	.155	1.261	.916	1.736
Anxious attachment				.299	.173	.083	1.349	.961	1.893
Block 3	36.096	7	.435			< .001			
Constant				-4.059	1.598	.011	.017		
Neighborhood Disadvantage				.306	.172	.075	1.358	.969	1.904
Avoidant attachment				-.031	.204	.879	.969	.650	1.446
Anxious attachment				.229	.221	.302	1.257	.815	1.939
Neglect				-.546	.582	.348	.579	.185	1.813
Physical abuse				-.496	.603	.411	.609	.187	1.984
Witness to domestic violence				-.420	.590	.477	.657	.207	2.089
Material deprivation				.162	.085	.057	1.176	.995	1.389
Gender				-.430	.747	.564	.650	.150	2.811
Dissociation				.030	.015	.040	1.031	1.011	1.061
PTSD symptoms				.014	.019	.464	1.014	.977	1.053

Nag R^2 Nagelkerke R^2, *C.I.* Confidence interval

PTSD and Psychological Dating Violence

In addition, our findings are consistent with the literature showing that PTSD symptoms are a risk factor for psychological dating violence (Dokkedahl et al., 2021; Messing et al., 2012). Different PTSD symptoms may be associated with these increased risks. Firstly, the high levels of hyperarousal that individuals with PTSD symptoms often experience may make it difficult for them to discriminate real danger from false alarms and as a result, increase their vulnerability to revictimization (Lahav et al., 2019). Krause et al., (2006) also suggested that individuals who experience numbing symptoms due to PTSD may suppress negative anxious affects, thus tempering with their capacity to identify situations of abuse and as result increasing their likelihood of entering and remaining in an abusive romantic relationship. There is also some evidence suggesting that PTSD symptoms may play a role in physical dating violence (Iverson et al., 2013; Kuijpers et al., 2012), which is inconsistent with our findings. Previous studies have looked at the impact of distinct PTSD clusters (reexperiencing, arousal, avoidance and numbing) and found that only some clusters were associated with physical dating violence (e.g. reexperiencing (Kuijpers et al., 2012) and hyperarousal (Iverson et al., 2013)). In the present study, only the total score on the PTSD symptom scale, not the cluster scores, was used, which could explain the discrepancy of findings. In line with this explanation, a study that looked at PTSD symptoms overall (no clusters) found similar results as the current study, where PTSD was found to mediate the relationship between CSA and psychological dating violence and sexual dating violence, but not with physical dating violence (Messing et al., 2012).

Dissociation and Physical Dating Violence

Our findings are consistent with previous studies showing that dissociation is associated with physical dating violence (Iverson et al., 2013; Zamir et al., 2018). A model, proposed by Polusny and Follette (1995), suggests that individuals with dissociative symptoms may dismiss violent cues in romantic relationships, hindering their ability to adapt and respond (e.g., retreat) accordingly in these situations. In the current study, dissociation was not associated with either sexual revictimization or psychological dating violence. Individuals with dissociative symptoms may feel emotionally numb, distant from their surroundings and forget certain events which could lead them to misidentify acts of sexual (Gewirtz-Meydan & Lahav, 2020), and psychological dating violence (Zerubavel et al., 2017). Physical marks of abuse (ex. bruises, scratches, cuts, etc.) resulting from physical dating violence may help survivors remember the physical abuse despite experiencing dissociation during the assault and thus increase the rates of self-report for this type of revictimization (Rush et al., 2014).

Ecological Perspective

The hierarchical design used allowed us to identify which of the risk factors remained significantly associated with revictimization when they were all considered at once, which may explain that factors that had previously been identified as significantly associated to interpersonal revictimization (e.g. anxious attachment (Brenner & Ben-Amitay, 2015)) were no longer significant when they were considered in one model. Indeed, while neighbourhood disadvantage and anxious attachment were significant in bivariate analyses, they became non-significant once all risk factors were included. Consistent with an ecological approach (Belsky, 1980; Dahlberg & Krug, 2002), proximal factors—here mental health and childhood physical abuse—appeared to be the most salient risk factors for interpersonal revictimization of CSA survivors. Unlike distal risk factors, PTSD symptoms and dissociation pose an immediate threat since the symptoms of these mental health problems directly impact the individual and, by reverberation, their relationships and environment. Additionally, experiencing multiple forms of CM, specifically physical abuse and CSA, seems to have an additive effect and to be associated with an increased vulnerability to experience further victimization, particularly of sexual nature. Consistent with our findings, one other study using an ecological model found that only individual-level factors, and not community-level factors, remained significant in predicting sexual revictimization after all other predictors were considered (Pittenger et al., 2018).

Although most variables were not found to be uniquely significant in the final steps of our hierarchical analyses, the overall high percentages of explained variance when all three blocks were entered and the major increases in explained variance with the addition of the final block, in particular, are worth mentioning. This supports the relevance of considering many risk factors, especially at the individual level, and at multiple levels of the ecology to further our understanding of the interpersonal revictimization of CSA survivors. As argued by ecological theorists (Belsky 1980; Dahlberg & Krug, 2002), risk and protective factors associated with (re) victimization do not work in silos, and violence often arises from a complex interplay of variables. The present findings seem to provide yet another example of this phenomenon.

Limitations and Recommendations for Future Research

This study is one of the few examining the association between various individual-, relational-, and community-level factors and adult revictimization in survivors of CSA. While this study has several methodological strengths (e.g., validated measures, respectable sample size for CSA victims), some limitations are to be mentioned. First, a cross-sectional design was used, limiting the conclusions that can be drawn regarding the causal and temporal relationships of events. Secondly, the young adults in the sample responded to self-reported measures in which a recall bias could be present due to retrospective measurement. Finally, this study used a sample with a low diversity and a small proportion of men, limiting the generalizability of the findings. Future research should ideally use prospective and longitudinal data and recruit larger samples with greater diversity including more men and individuals from minority groups. In addition, the use of more complex statistical models, such as structural equation modelling, may be used to help delineate potential mechanisms (e.g. testing mental health factors as mediators of the impact of childhood maltreatment experiences on dating violence (Messing et al., 2012)) and moderating factors (e.g.,

gender (Schuster & Tomaszewska, 2020)) present in the uncovered associations. Additional variables known to be risk factors for revictimization among CSA survivors, such as emotion regulation (Charak et al., 2018) and depression (Miron & Orcutt, 2014), could be examined. Examining closely the context in which the CSA occurred (i.e. relationship with the abuser) could also help further the understanding of revictimization through a betrayal trauma lens (Freyd, 1994).

Practical Implications and Conclusions

Our findings show the importance of considering how CSA survivors may be further put at risk of revictimization by mental health difficulties and experiences of childhood physical abuse. As such, prioritizing individual- and family-level interventions seems to be a key area of focus for policymakers and funding agencies. Indeed, providing CSA survivors with evidence-based interventions targeting trauma-related symptoms (e.g., PTSD and dissociation), such as Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) (Wekerle et al., 2019), and family dynamics or

parenting skills, could be beneficial in the recovery process of CSA survivors. Providing funding for CSA survivors to receive the high-quality care they need is primordial. It is crucial to implement these interventions as early as possible in the young adult's life in order to decrease the likelihood of revictimization in the form of sexual, physical, or psychological violence in adulthood.

In conclusion, early interventions that take into consideration the important impact of the individual's mental health, attachment style, and additional experiences of childhood maltreatment may be the most beneficial in helping CSA survivors cope adequately with their traumatic experience and prevent them from being revictimized in adulthood.

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