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Exploring the Relationship Between Child Maltreatment, Intimate Partner Violence Victimization, and Self-Injurious Thoughts and Behaviors

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ABSTRACT
Child maltreatment is considered a significant risk factor for young adult self-injury; however, the mechanisms that underlie this relationship are not yet understood. To elucidate this association, the mediating role of intimate partner violence victimization in the relationship between child maltreatment and self-injurious thoughts and behaviors was investigated. The sample consisted of 406 young adults (346 females; \( M_{\text{age}} = 19.87 \) years; \( SD = 1.72 \)) involved in a couple relationship. Results of bootstrapping procedures demonstrated that intimate partner violence victimization mediated the relationship between child maltreatment and self-injurious behaviors but did not mediate the association between child maltreatment and self-injurious thoughts. Results suggest that young adults with a history of child maltreatment may be more likely to be exposed to IPV victimization, which, in turn, is associated with the use of self-injurious behaviors, but not the use of self-injurious thoughts. Findings highlight the utility of examining models that incorporate distal and proximal factors contributing to self-injury, and provide direction toward better understanding the relationship experiences of self-injuring young adults.

Non-suicidal self-injury (referred to herein as NSSI) is considered a serious health concern among young adult populations, and is associated with a host of dangerous physical and psychological implications (Hasking, Momeni, Swannell, & Chia, 2008). Elevated lifetime prevalence rates of 12–17% suggest that NSSI is an issue of widespread nature, with reports indicating that a considerable proportion of young adults engage in NSSI thoughts and behaviors (Landstedt & Gillander Gådin, 2011). Identifying the factors that precipitate NSSI is crucial to advancing current clinical conceptualizations and treatment strategies for those engaging in such thoughts and behaviors (Shenk, Noll, & Cassarly, 2010). Regarding such risk factors, child maltreatment is consistently cited as holding a key role in the development of later NSSI (for a review, see Lang & Sharma-Patel, 2011). Although child maltreatment is considered a significant risk factor for NSSI, the mechanisms...
through which childhood environment and adversities might lead to NSSI are not well understood to date (Swannell et al., 2012). Research is increasingly highlighting the role of mediating factors that may serve to explicate this link, such as low social support (e.g., Christoffersen, Møhl, DePanfilis, & Vammen, 2015) and self-criticism (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007). Moreover, recent findings indicate a link between intimate partner violence victimization (referred to herein as IPV victimization) and NSSI (e.g., Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010; Vaughn, Salas-Wright, DeLisi, & Larson, 2015), thus indicating that exposure to relationship violence is also associated with NSSI. While existing research findings provide a foundational conception of the factors that may lead to young adult NSSI, much remains to be understood regarding the underlying relational pathways that link these phenomena.

**Brief overview of child maltreatment**

Child maltreatment constitutes a social and health problem that affects many individuals throughout Canada (Public Health Agency of Canada, 2008) and is associated with profound consequences. Child maltreatment refers to any non-accidental behavior by a parent or caregiver that results in harm or risk of harm to a child, and is commonly divided into five subtypes: physical abuse, sexual abuse, psychological maltreatment, neglect, and the witnessing of family violence. Prevalence estimates obtained from the Canadian Community Health Survey: Mental Health determined that incidences of child maltreatment are of considerable concern, with results indicating that approximately 32% of individuals are exposed to at least one type of maltreatment in childhood (Statistics Canada, 2012). Recent research indicates that most victimized children do not experience one type of maltreatment, but rather, tend to experience multiple victimizations (e.g., Babchishin & Romano, 2014), defined as exposure to different types of maltreatment within the same time period (Finkelhor, Ormrod, Turner, & Hamby, 2005). Child maltreatment is associated with a host of devastating and enduring consequences, including symptoms of trauma, depression, anxiety, as well as an increased risk for later IPV victimization (Babchishin & Romano, 2014; Connolly et al., 2014; Romano, Babchishin, Marquis, & Fréchette, 2015).

**Brief overview of IPV victimization**

IPV victimization constitutes a serious and often unrecognized problem that is consistently associated with physical and psychological consequences to those affected (Stewart, MacMillan, & Wathen, 2013). This term describes psychologically (e.g., insulting, yelling), physically (e.g., nonconsensual hitting, slapping), and sexually (e.g., coercive sexual behavior) violent behavior
perpetrated by a current or former partner. IPV victimization is of particular concern among young adult populations, as the course of IPV is considered to peak during young adulthood and decline thereafter (Caetano, Field, Ramisetty-Mikler, & McGrath, 2005; Cunradi, Caetano, Clark, & Schafer, 2000). IPV victimization is consistently associated with numerous serious psychological and physical health consequences (Stewart et al., 2013; Warshaw, Brashler, & Gil, 2009). Individuals affected by IPV are at a significant risk for developing depression, anxiety, and trauma-related disorders, in addition to a number of other deleterious consequences, such as substance use, suicidal ideation, and NSSI thoughts and behaviors (Caldwell, Swan, & Woodbrown, 2012; Levesque et al., 2010). Most related studies focus on the consequences of violence among married adults, while violence occurring among college-aged dating or cohabiting partners remains under-researched (Johnson & Dawson, 2011).

**Theoretical links between NSSI, child maltreatment, and IPV victimization**

The relations between child maltreatment, IPV victimization, and NSSI may perhaps best be understood through the lens of attachment theory (Bowlby, 1969/1982) as well as the integrated theoretical model of NSSI (for a detailed description, see Nock, 2009). Attachment theory provides a framework for understanding the link between child maltreatment and IPV victimization, as it contends that the quality of early parent-child experiences serves as a template that is carried forward into later romantic relationships. As children, individuals form representations of relationships formulated through interactions with parents in childhood, which then guide and inform expectations for the quality of later interactions with romantic partners. To this end, parents are considered to serve as prototypes for one’s later romantic partners, and thus, IPV may be more readily tolerated by individuals with a history of child maltreatment (Connolly et al., 2014).

The integrated theoretical model contends that the risk for NSSI is increased by the presence of distal risk factors (e.g., childhood abuse) that may lead to the development of proximal interpersonal and intrapersonal vulnerability factors, such as high aversive emotions and deficits in social problem-solving and communication skills among self-injurers (Hilt, Cha, & Nolen-Hoeksema, 2008; Nock & Mendes, 2008). By extension, it is plausible to anticipate that such vulnerabilities may function to place one at a heightened risk for IPV victimization, as they may preclude the expression and negotiation of needs, and may limit one’s ability to effectively manage conflict within the context of a couple relationship. According to the model, such risk factors, coupled with the onset of a stressful event (e.g., overwhelming work or social demands), may then trigger engagement in NSSI. We propose that the experience of IPV victimization may serve as a
maintenance factor that precludes or interrupts the development of healthy coping behaviors that typically emerge when individuals develop romantic attachment bonds to their partners, namely, dyadic coping (Revenson, Kayser, & Bodenmann, 2005). While the initial onset of NSSI may be precipitated by a history of child maltreatment, such thoughts and behaviors may be maintained by the continued distress of being re-victimized in the context of one’s romantic relationship. Attachment research has demonstrated that, within healthy romantic relationships, partners turn to one another to seek support and care in times of distress, thus engaging in dyadic coping (Revenson et al., 2005). For those individuals victimized by IPV, the necessary emotional safety required to reach out to one’s partner to cope with the onset of a stressor may be lacking, and as such, their existing coping strategies (namely, NSSI thoughts and behaviors) may be continually practiced rather than taper off through the introduction of dyadic coping experiences.

Empirical links between NSSI, child maltreatment, and IPV victimization

Child maltreatment and NSSI
Strong associations between child maltreatment and NSSI have been repeatedly established and replicated in the literature, with retrospective and prospective studies reporting that exposure to child maltreatment drastically increases the risk of engaging in NSSI thoughts and behaviors for both males and females (e.g., see Lang & Sharma-Patel, 2011 for a review; Martin, Bureau, Yurkowski, Lafontaine, & Cloutier, 2015), above and beyond the effects of other risk factors (Yates, Carlson, & Egeland, 2008). Although it is evident that child maltreatment is linked to later NSSI, the underlying or causal pathway between the two remains unclear (Swannell et al., 2012). At present, there is a mixed consensus regarding whether there exists a direct relation between maltreatment and NSSI, or whether the links between maltreatment and NSSI can best be understood by examining potential mediating factors. A growing line of research is in support of the latter, with a number of recent studies aimed at investigating intrapersonal factors, such as self-criticism (e.g., Glassman et al., 2007), dissociation (e.g., Yates et al., 2008), and interpersonal factors like low social support (Christoffersen et al., 2015) as possible mediators. To our knowledge, no prior studies have investigated the potential mediating role of IPV victimization on the link between child maltreatment and NSSI.

Child maltreatment and IPV victimization
IPV victimization is well-documented among survivors of child maltreatment, with a wealth of literature indicating that child maltreatment is associated with later victimization in the context of partner violence among
both male and female adults (e.g., Dong, Anda, Dube, Giles, & Felitti, 2003; Reyome, 2010; Widom, Czaja, & Dutton, 2014). Child sexual abuse has been consistent with a high likelihood of IPV victimization in adulthood (e.g., Dong et al., 2003; Fry, McCoy, & Swales, 2012). Recently, child physical (Widom et al., 2014) and psychological maltreatment (for a review, see Reyome, 2010) have also been identified as antecedents for later IPV victimization. Findings regarding neglect (Widom et al., 2014) and witnessing family violence (Stith et al., 2000) have similarly indicated that these forms of maltreatment also serve as risk factors for IPV victimization.

**IPV victimization and NSSI**

As research efforts have managed to consistently identify an association between child maltreatment and NSSI, some investigators have begun to examine another form of interpersonal violence—IPV victimization—as a correlate of NSSI. Findings from a small number of recent studies suggest that all forms of IPV victimization (i.e., physical, sexual, and psychological violence) are related to NSSI thoughts (Levesque et al., 2010; Wong, Wang, Meng, & Phillips, 2011) and behaviors (Levesque et al., 2010; Sansone, Chu, & Wiederman, 2007; Vaughn et al., 2015; Wong et al., 2011). While such literature provides important evidence for the link between IPV victimization and NSSI, further exploration of this relationship is needed among representative community samples. To our knowledge, only two studies to date (i.e., Levesque et al., 2010; Vaughn et al., 2015) have examined this association with a representative sample of both males and females. Levesque and colleagues’ (2010) utilized a university student sample and reported mixed results that supported links between all types of IPV victimization and NSSI behaviors. In contrast, the authors also investigated the link between intimate partner victimization and NSSI thoughts, but found no significant results. Findings yielded from Vaughn and colleagues’ (2015) representative adult sample are also limited, as they examined only physical violence and its relation to NSSI behaviors. As certain types of IPV are considered to occur frequently among representative couples (i.e., psychological and physical violence), it is important that its contributions to NSSI be thoroughly examined. As such, further research replicating and extending such findings is justified in order to clarify the role of IPV victimization in the use of NSSI thoughts and behaviors.

**Objectives of the study**

As described above, research indicates that the current variables of interest (i.e., child maltreatment, IPV victimization, and NSSI thoughts and behaviors) are closely related; however, the underlying processes tying them together are not yet understood. We propose the conceptual possibility
that the presence of IPV victimization may serve to reinforce or maintain IPV victimization among young adults with a history of child maltreatment, as violence victimization may preclude or inhibit the development of healthy dyadic coping behaviors that typically emerge in couple relationships. In order to elucidate the unique associations between these variables and explore this conceptual possibility, the primary aim of the present study was to propose and evaluate a novel conceptual model examining IPV victimization as a mediator of child maltreatment and NSSI. Specifically, the study investigated the potential mediating role of IPV victimization on the relationship between child maltreatment and NSSI thoughts and behaviors. The present study also constituted two secondary objectives. There is a paucity of research examining the ties between child maltreatment and IPV victimization among representative young adults. In an effort to relieve this gap in the literature, this study aimed to establish whether child maltreatment is linked to IPV victimization among young adults in the community. Moreover, it currently remains unclear whether IPV victimization is linked to both NSSI thoughts and behaviors, as very limited research has been focused on exploring such ties. In order to elucidate such relations, this study sought to provide clarification regarding whether IPV victimization is linked to both forms of NSSI.

**Hypotheses**

The present study was guided by four hypotheses. In line with existing research, it was expected that child maltreatment (as measured by participants’ total experiences of neglect; witnessing family violence; and physical, psychological, and sexual abuse) would directly predict NSSI thoughts and behaviors (as indicated by the use of NSSI thoughts and behaviors during the last 6 months). Secondly, it was hypothesized that child maltreatment would directly predict IPV victimization (as measured by participants’ total experiences of physical, psychological, and sexual violence during the last 6 months). Similarly, it was hypothesized that IPV victimization would directly predict NSSI thoughts and behaviors. Finally, it was expected that IPV victimization would mediate the relationship between child maltreatment and NSSI thoughts and behaviors. These hypotheses were tested through the implementation of two statistical models. As described hereafter, the first model (Model 1) examined links between child maltreatment, IPV victimization, and NSSI thoughts, while the second model (Model 2) explored the associations between such forms of interpersonal violence and NSSI behaviors.
Method

Participants

The sample was comprised of 406 young adults (346 females; $M_{age} = 19.87$ years; $SD = 1.72$) enrolled in introductory psychology courses at a Canadian University. Eligibility criteria for participation in the study included being between the ages of 17 and 25 years of age and being involved in a couple relationship for a duration of at least 6 months at the time of participation.

The average duration of participants’ current romantic relationship was 2.09 years ($SD = 1.29$). The majority of participants were not married (93%), and were not cohabiting with their partner (86%) at the time of participation. Most participants (92%) indicated that their main daily occupation was being a student, while other participants identified as white-collar workers (3%) or as blue-collar workers (2%). The remaining 3% of participants identified as unemployed, as self-employed, or as homemakers. Seventy-eight percent of the sample were of European descent, while 12% of the sample identified as Asian, 4% as Black, 4% as Middle Eastern, and 2% as Latino. Thirteen percent ($n = 52$) of participants reported experiencing NSSI thoughts (but not behaviors) throughout the past 6 months, while 12% of participants reported engaging in NSSI behaviors throughout the past 6 months (all participants who endorsed NSSI behaviors also endorsed NSSI thoughts; $n = 49$), and 75% ($n = 305$) of participants reported no engagement in NSSI thoughts or behaviors throughout the past 6 months. Within the subgroup of people who self-injure, the average age of onset of NSSI was 14.33 years ($SD = 2.90$).

Procedure

All participants were registered in introductory psychology courses at an Eastern Canadian University, and voluntarily registered for the study through a research participation program offering first year undergraduate students opportunities to partake in research for additional course credit. Each participant was assigned a computer-generated five-digit identification code by the program’s computerized system, which was used to label the data. No other identifying information was collected. Participants were allotted two credit points toward their final course grade for partaking in the study. Once registered for the study, all participants were subsequently provided access to the questionnaire package through a secure and encrypted web-based link (Survey Monkey). The questionnaire package included an information letter, which outlined the voluntary nature of the study, which was followed by the measures of study.
Measures

Measure of child maltreatment
The Comprehensive Child Maltreatment Scale for adults (Higgins & McCabe, 2001) is a 22-item measure of five separate types of child maltreatment experienced during childhood (i.e., sexual abuse, physical abuse, psychological maltreatment, neglect, and witnessing family violence). Likert-type response formats are used to assess the frequency of occurrences of each type of maltreatment directed toward participants by their mothers, fathers, or other adults. Only maltreatment perpetrated by participants’ mothers and fathers was examined in the present study. Response options range from: Never or almost never to Very frequently on a 5-point scale, and were summed to one overall index of child maltreatment (ranging from 0 to 90), with elevated scores indicating greater levels of maltreatment. This scale is considered to be a psychometrically-sound measure of multiple forms of child maltreatment, with adequate test-retest reliability and adequate internal consistency reported by its authors (Higgins & McCabe, 2001). In the present study, the total scale demonstrated excellent internal consistency (\( \alpha = .94 \)).

Measure of IPV victimization
The Revised Conflict Tactics Scales (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is a 78-item measure of IPV that assesses IPV perpetration (27 items) and victimization (27 items) within five subscales: physical violence, psychological violence, negotiation strategies, injuries sustained, and sexual violence. Only the items assessing victimization were used, as the present study was focused on investigating links between victimization (not perpetration) and self-injury. A Likert-type response format is used to indicate the frequency of occurrences of violence throughout the last 6 months. Response options range from: “this has never happened,” to “this has happened more than 20 times in the last six months” on a 7-point scale and were coded with the approximate median score: 0, 1, 2, 4, 8, 15, and 25, respectively. Responses were summed to create one overall index of victimization (ranging from 0 to 675), with elevated scores indicating greater levels of victimization. This scale is considered to be a psychometrically-sound measure of multiple types of IPV. Numerous studies attest to the reliability and validity of this measure (see Straus, 2007, for a review). In the present study, the total scale demonstrated excellent internal consistency (\( \alpha = .98 \)).

Measure of NSSI
The Ottawa Self-Injury Inventory (OSI; Cloutier & Nixon, 2003; Martin et al., 2013) is a 120-item measure of current and past NSSI thoughts, behaviors, and intended results of the behaviors. One item from the OSI was used to measure engagement in NSSI behaviors over the last 6 months (i.e., ‘How
often in the last 6 months have you actually injured yourself without the intention to kill yourself?"), and a second item was used to assess engagement in NSSI thoughts over the last 6 months (i.e., ‘How often in the last 6 months have you thought about injuring yourself without the intention to kill yourself?’). These two items were used as single-item outcome variables, and as such, NSSI thoughts and NSSI behaviors were examined separately. Responses to these two items indicated the frequency of NSSI thoughts and behaviors, respectively (not at all, 1 to 5 times, monthly, weekly, daily). Response categories for the two items were then collapsed into dichotomous variables [i.e., Model 1: participants who did not endorse NSSI were coded as ‘0’, participants who endorsed thoughts (but not behaviors) were coded as ‘1’; Model 2: participants who did not endorse NSSI were coded as ‘0’, participants who endorsed behaviors (and thoughts) coded as ‘2’]. The OSI is considered an appropriate tool for assessing NSSI thoughts and behaviors (i.e., Bureau et al., 2010; Cloutier & Nixon, 2003; Martin et al., 2013), and is considered to demonstrate adequate test-retest reliability (Cloutier & Nixon, 2003), and good internal consistency scores (Martin et al., 2013).

Data analysis

Analyses were conducted using SPSS software; the PROCESS macro (Hayes, 2012), a third-party software package created for SPSS, was used to evaluate the mediation models. Prior to testing the hypotheses, the data were screened for missing values. All missing values were random and none had more than 5% of data missing per item. Therefore, missing values for the relevant scales (excluding NSSI thoughts and behaviors) were imputed using expectation maximization, a maximum likelihood algorithm used to estimate model parameters (Tabachnick & Fidell, 2013). Two separate mediation models were evaluated through ordinary least squares path analysis using bootstrapping resampling procedures, as this method is considered to be a robust nonparametric resampling approach that results in a bias-corrected (BC) confidence interval (CI) free of assumptions about the shape of the distributions of the variables (Preacher & Hayes, 2004). For both models, 10,000 bootstrapped samples were used to determine a 90% CI to interpret model effects. The first model (Model 1) investigated IPV victimization as a mediator of the association between child maltreatment and the use of NSSI thoughts, while the second model (Model 2) examined the IPV victimization as a mediator of the relation between child maltreatment and the use of NSSI behaviors (see Figures 1 and 2).

The unstandardized regression coefficient between child maltreatment and NSSI thoughts, controlling for IPV victimization, is in parentheses.

The unstandardized regression coefficient between child maltreatment and NSSI behaviors, controlling for IPV victimization, is in parentheses.
Results

Preliminary analyses

For Model 1, correlational analyses indicated that greater child maltreatment held a weak positive correlation with greater IPV victimization and NSSI thoughts. IPV victimization was not significantly correlated to NSSI thoughts. For Model 2, results indicated moderate positive correlations between all primary study variables. Potential covariates, including participant age, sex, and living arrangements, were examined. No significant associations were found between these variables and the outcome variables, and thus were not controlled for in the analyses. The means, standard deviations, and intercorrelations for the primary study variables in Models 1 and 2 are presented in Table 1.

Principal analyses

With respect to Model 1 (N = 357), results indicated that child maltreatment was directly associated with both IPV victimization (p < .05; see Figure 1) and the use of NSSI thoughts (p < .01). In contrast, IPV victimization was not directly associated with NSSI thoughts (p = .009). Results indicated that the indirect...
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**Discussion**

The primary aim of the present study was to evaluate a novel conceptual model examining IPV victimization as a mediator of the relation between child maltreatment and NSSI thoughts and behaviors. The results yielded for
Model 1 do not support the mediational model proposed, and indicate that the indirect effect of child maltreatment on NSSI thoughts through IPV victimization was not significant. In contrast, the results from Model 2 are consistent with the hypotheses proposed, as they indicate that IPV victimization partially mediated the effect of child maltreatment on NSSI behaviors. Thus, the main contribution of the study is the finding that young adults with a history of child maltreatment may be more likely to be exposed to IPV victimization, which, in turn, is associated with the use of NSSI behaviors, but not the use of NSSI thoughts. Specifically, results from Model 1 indicated that child maltreatment predicted IPV victimization, while the latter did not, in turn, predict NSSI thoughts. The link found between child maltreatment and IPV victimization complements the attachment theory-based notion that a parent-child relationship marked by maltreatment may serve as a model for violence victimization in later romantic relationships (Connolly et al., 2014). As most research conducted on the link between child maltreatment and IPV victimization has targeted specific at-risk populations (e.g., clinical samples of participants, participants at risk of engaging in criminal activity), this finding also extends existing research, as it indicates that community-based young adults with a history of maltreatment may also be at a heightened risk for exposure to IPV.

To our knowledge, only one existing study has investigated the link between NSSI thoughts and IPV victimization among a representative sample of young adults (Levesque et al., 2010). The present findings lend support to that of Levesque and colleagues (2010), who similarly found no link between IPV victimization and NSSI thoughts. This suggests that while exposure to child maltreatment holds an important role in predicting the use of NSSI thoughts in young adulthood, being subject to IPV victimization may not represent the typical experience of individuals who engage in NSSI thoughts (and not behaviors) to cope with felt distress. IPV victimization is a deleterious and traumatic experience, and thus it is plausible that thinking of harming oneself may not be sufficient to effectively reduce the intense negative affect resulting from such ongoing victimization. It is possible that the experience of repeated victimization in the context of one’s significant interpersonal relationships in both childhood and young adulthood may lead to engagement in more severe or destructive maladaptive coping strategies beyond NSSI thoughts (e.g., NSSI behaviors, disordered eating, or substance abuse). Indeed, exposure to multiple traumatic events heightens vulnerability to risky and maladaptive coping strategies (e.g., Littleton, Horsley, John, & Nelson, 2007; Marshall, Galea, Wood, & Kerr, 2013), with a linear relationship between the number of traumatic experiences lived and severity of dangerous or risky actions practiced (Johnson & Johnson, 2013; Layne et al., 2014).
Results from Model 2 indicated that IPV victimization mediated the association between child maltreatment and NSSI behaviors. This finding is in line with the hypotheses proposed, and suggests that exposure to child maltreatment may lead to an increased risk for subsequent revictimization in the context of one’s romantic relationship, which in turn may increase the risk of NSSI behaviors. The direct link found between IPV victimization and NSSI behaviors is consistent with prior research (i.e., Levesque et al., 2010; Vaughn et al., 2015). Taken together, the present study, in conjunction with the existing two studies, provide budding evidence that ongoing or recent IPV victimization may hold an important key to understanding the maintenance factors underlying young adult NSSI. Further, this result provides empirical support for the extension of the integrated theoretical model of NSSI as described above. Indeed, the initial onset of NSSI thoughts and behaviors may be precipitated by a history of child maltreatment, and such behaviors may be maintained by the continued distress of being revictimized in the context of one’s romantic relationship. IPV victimization may serve to maintain NSSI behaviors in a two-fold manner. First, as NSSI most often serves an affect regulation function, it may be used to reduce intense or overwhelming negative affect resulting from the experience of ongoing violence victimization. Second, such violence may interfere with the development of dyadic coping strategies commonly employed by individuals comprising couple relationships to diffuse stress and restore one’s sense of well-being, thus leaving victimized individuals to regulate their distress alone. In addition to the affect regulation function of NSSI, individuals also report harming themselves to elicit sympathy or care from others (Klonsky, 2007). Thus, it is possible that individuals victimized by their partners may engage in acts of NSSI in an attempt to evoke compassion or sensitivity from their perpetrator.

Limitations and future directions

Although the present study holds several strengths, some limitations and directions for future studies warrant consideration. First, it remains to be seen if the present results are generalizable to samples characterized by larger variability in educational background and gender identity. Considering that the sample was primarily composed of female university students, its findings may not be representative of males and non-student young adults. Due to the cross-sectional nature of the study, no definite conclusions can be drawn concerning the direction of causality. That said, the direction of the models tested are rooted in existing theory and research, thus enhancing confidence in the hypothesized directionality of the associations examined. Second, child maltreatment was measured using retrospective self-report, which poses limitations pertaining to the subjectivity of participants’ memories. In order to reduce the potential of such a bias, a validated and psychometrically-sound measure was selected for use in the present study. Finally, the present study constituted an examination of
overall experiences of child maltreatment and IPV victimization, and did not examine specific subtypes of such constructs, as this would have compromised the power of the analyses conducted. As such, the present study findings do not shed light on which types of maltreatment and victimization may be more strongly linked to NSSI thoughts and behaviors. In addition, research examining mediation models consisting of child maltreatment, IPV victimization, and nuanced facets of NSSI (e.g., severity, duration, or frequency of NSSI) would be a helpful and successive step toward better understanding how such constructs relate to different aspects of NSSI. Finally, prospective cohort studies would considerably advance our understanding of the potential causal links between the variables of study.

**Implications and conclusions**

The findings of the present study demonstrate the strong role held by adverse relational experiences in the use of young adult NSSI. In particular, findings suggest that NSSI thoughts and behaviors may be precipitated by a history of child maltreatment, and that the use of NSSI behaviors may be maintained by the presence of IPV victimization. This study’s findings both complement and expand upon the integrated theoretical model (Nock, 2009), and is the first to examine the associations between both forms of interpersonal violence and NSSI. Findings indicate that, in addition to considering the role of distal correlates such as child maltreatment, proximal correlates such as IPV victimization should also be incorporated into our understanding of the factors related to young adult NSSI.

Finally, these results hold valuable implications for both prevention and clinical intervention strategies. Although child maltreatment prevention is critical for a myriad of reasons, it also constitutes a key component to reducing the risk for later engagement in both abusive romantic relationships as well as maladaptive coping strategies, such as NSSI, as evidenced by the significant associations revealed between such variables. Further, the potential maintenance role of IPV victimization highlights the importance of interventions aimed at educating young adults on healthy romantic relationships, as this may be vital to ultimately reducing the occurrence of NSSI behaviors. As the present findings illustrate the key role of close interpersonal relationships in the use of NSSI, therapies focused on improving relationship quality and enhancing effective problem-solving and coping strategies may be effective in both preventing and encouraging the cessation of young-adult NSSI.

**Disclosure of interest**

The authors declare that they have no conflicts of interest to report.
ethic standards and informed consent

All procedures followed were in accordance with the ethical standards of the Research Ethics Board, University of Ottawa, Ontario, Canada, with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all participants for being included in the study.

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