# Predictors of Intimate Partner Violence Victimization by Multiple Partners Over a Period of 8 Years

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**Abstract**

Intimate partner violence (IPV) is a pervasive social issue with broad physical and mental health implications. Although 35%–56% of women report IPV victimization with more than one violent partner, few studies have identified factors that increase the risk of experiencing IPV across multiple partners (i.e., IPV reengagement). In the current study, multilevel modeling was used to examine the roles of trauma exposure, mental health, and sociodemographic factors in the risk for reengagement

in a sample of women (*N* = 120) with IPV victimization. Participants were drawn from a randomized control trial of an intervention for mothers who had experienced IPV. The results revealed that more psychological but less sexual IPV was associated with increased reengagement. Higher degrees of posttraumatic reexperiencing symptoms were associated with less reengagement. Depressive symptoms were also significantly associated with reengagement such that lower levels of positive affect and increased somatic symptoms were associated with increased reengagement. Higher income levels and less housing instability were associated with more reengagement, $\beta_{range}$ = -.13–.16. Finally, compared to the control condition, participation in the intervention program was significantly associated with lower levels of reengagement at 8-year follow-up, β = -.75, *p* = .001. These findings suggest that it is not what happened (i.e., experiences of abuse) but rather a woman's posttraumatic experience (i.e., posttraumatic stress and depressive symptoms) that creates risk for reengagement. The findings support the long-term effectiveness of a brief intervention in reducing reengagement.

Intimate partner violence (IPV) is a pervasive issue that includes acts or threats of physical, sexual, and emotional violence by a current or former intimate partner (Black et al., 2011). Approximately 36% of women experience IPV (Smith et al., 2018), and its economic toll, including medical expenses, lost productivity, and criminal justice costs, has been shown to amount to more than $100,000 (USD) per woman (Peterson et al., 2018). Research has shown that IPV victimization often occurs with more than a single intimate partner: 35%–56% of women who have experienced IPV report victimization by multiple partners (Alexander, 2009; Stein et al., 2019). Moreover, IPV victimization that occurs across multiple partners may suggest a chronic pattern of relational disruption. Although the reasons for involvement in multiple violent relationships vary, there are likely several individual factors that increase the risk. These risk mechanisms are not well articulated (Ørke et al., 2018) despite evidence that having multiple violent partners is associated with poorer

outcomes than having a single violent partner (Bogat et al., 2003). Delineating the risk mechanisms of having multiple violent partners can inform efforts to specifically target modifiable risk factors as a pathway to sustained IPV reduction. The present study followed women with IPV victimization who have children across 8 years to identify the mechanisms of the risk for IPV victimization with multiple violent partners.

Evidence suggests that IPV is a dyadic and relational process, meaning that characteristics of both the person perpetrating the IPV and the person experiencing the IPV may contribute to the risk of its occurrence (Kuijpers et al., 2012c). Theoretical frameworks, such as the developmental systems perspective (Capaldi et al., 2005), also indicate that there may be factors in women's lives that increase their vulnerability to IPV. Although explicating the issue of IPV victimization risk factors has at times been criticized as "victim-blaming" (Cattaneo & Goodman, 2005), empirical work has documented the importance of such work in reducing revictimization (Goodman et al., 2005; Kuijpers et al., 2011) and identifying possible intervention targets.

Recent work on mechanisms of risk for IPV victimization has focused on the risk of having multiple violent partners (Ørke et al., 2018), but this body of research is limited by variability in definitions of IPV victimization across studies (Kuijpers et al., 2011). Terms such as "reabuse," "revictimization," and "recidivism" have often been used interchangeably (Cattaneo & Goodman, 2005), and studies have varied in whether they defined revictimization as any future IPV or specifically as IPV perpetrated by a new partner. Chronic IPV victimization with the same violent partner versus IPV victimization across multiple partners are different phenomena with potentially different etiologies, underscoring the need for clarity of terms and the clear operationalization of constructs.

We use the term "IPV reengagement," or simply "reengagement," to refer to the number of distinct violent partners a person has over a specific period regardless of the amount of IPV victimization perpetrated by any specific partner. As defined here, the term does not imply or suggest a motive for involvement with violent partners, including any indication of "conscious choosing" of a partner due to IPV. We selected IPV reengagement over IPV revictimization, coining a new term (i.e., reengagement) that has not yet been used, a contrast to the latter term (i.e., revictimization), which has long been associated with varying definitions in the literature, as previously discussed. Ideally, the introduction of a new, clearly defined term will help to bring clarity and precision to the study of this aspect of chronic IPV.

Past IPV victimization has been consistently associated with future IPV victimization risk (Kuijpers et al., 2011, 2012c). One study of 164 treatment-seeking women caregivers who had recently experienced IPV found that increased psychological but not physical IPV was associated with reengagement, whereas increased sexual IPV was associated with less reengagement (Stein et al., 2019). This work was limited by the use of cross-sectional data, which limits conclusions about the temporal order of these associations. Similarly, although childhood sexual abuse (CSA) has been established as a risk factor for IPV victimization and may also confer risk for reengagement (Alexander, 2009; Barrios et al., 2015; Stein et al., 2019; Vatnar & Bjørkly, 2008), all current work that has examined the role of CSA on reengagement has utilized cross-sectional designs. Longitudinal work from the groundbreaking Adverse Childhood Experiences (ACEs) Study (Felitti et al., 1998) revealed that in a nationally representative sample of over 8,000 men and women, exposure to each ACE increased the risk for IPV in adulthood approximately 2-fold (Whitfield et al., 2003), suggesting that there is a graded association between traumatic experiences in childhood and

IPV risk. However, few longitudinal studies have examined the role of cumulative trauma during both childhood and adulthood, as well as past IPV and sexual abuse, in the risk of reengagement.

Posttraumatic stress symptoms (PTSS) have been consistently linked to the risk for IPV victimization (Iverson, Gradus, et al., 2011; Perez & Johnson, 2008) and are a known outcome of IPV exposure. However, associations between PTSS and reengagement have been inconsistent. Some longitudinal evidence has clearly shown that PTSS are associated with higher degrees of IPV victimization (Blasco-Ros et al., 2010; Iverson, Gradus, et al., 2011), whereas other research has not identified a strong link between PTSS and IPV (Cole et al., 2008; Sonis & Langer, 2008; Stein et al., 2019). The discrepant conceptualizations of IPV victimization in each study might partially account for the inconsistencies in these findings. Moreover, studies have varied in whether they examined PTSS in relation to reengagement history versus PTSS as a predictor of future reengagement. Continued investigation using longitudinal data collected over a longer period is needed to more accurately understand the contributions of PTSS to reengagement.

The inconsistent literature also suggests that the subdomains of PTSS may contribute differentially to the risk of reengagement. The presentation of posttraumatic stress disorder (PTSD) is nuanced and includes seemingly disparate types of symptoms (Schauer & Elbert, 2010). For example, numbing and hyperarousal symptoms are both frequently seen in the presentation of PTSS but are physiologically and experientially distinct. Numbing includes a potentially blunted responsiveness to the environment, whereas hyperarousal may increase sensitivity to trauma-related stimuli. Thus, different PTSS domains may differentially contribute to the risk of reengagement. However, very few studies of which we are aware have examined the contributions of the specific PTSS domains on IPV victimization (Dutton, 2009; Iverson et al., 2013), and no research to date has examined the role of these domains on IPV reengagement. Research examining

associations between PTSS domains and IPV victimization has yielded mixed results, with some studies indicating that numbing increases IPV risk and others suggesting that reexperiencing is more strongly linked to IPV (Cougle et al., 2009; Iverson et al., 2013; Krause et al., 2006; Kuijpers et al., 2012c). Despite a prior call for research to understand the contributions of PTSS symptom domains to IPV victimization (Dutton, 2009), evidence remains limited and inconclusive, highlighting the need for further longitudinal research in this area.

Depression has also been examined as a risk factor for future IPV victimization. Researchers have hypothesized that depression may affect one's ability to leave a violent situation or a violent partner due to high levels of guilt and hopelessness as well as low levels of energy and motivation (Cougle et al., 2009; Iverson, Gradus, et al., 2011). However, the findings are mixed regarding the nature of the association between depression and IPV (Iverson, Gradus, et al., 2011; Kuijpers et al., 2011). Although some longitudinal intervention research has established a link between depression and future IPV victimization (Iverson, Gradus, et al., 2011), other work using large-scale, cross-sectional designs has not (Renner & Whitney, 2012; Stein et al., 2019). Continued prospective longitudinal research is needed to discern the potential role of depression for conferring risk of IPV reengagement given the mixed nature of extant findings.

Existing literature on IPV victimization risk is limited by the siloed approach to conceptualizing risk factors. Studies have often considered the contributing role of mental health or trauma exposure but rarely consider both, missing the interacting and additive nature of these overlapping social epidemics (Dutton, 2009). Research that concurrently examines how the risk of reengagement is associated with past trauma exposure and mental health is needed. A framework that examines both "what happened to you" and "how you are doing"—a malleable target of intervention—to understand reengagement risk is advantageous as it further allows for the

consideration of the role of potential sociodemographic factors, such as employment status, income level, and housing instability, which have previously been linked to IPV victimization (Capaldi et al., 2012; Cummings et al., 2013). Identification of the contributing mechanisms for reengagement will allow for the development of prevention programs and treatments that target these risk factors as a pathway to effective and sustained IPV reduction.

Interventions indicated for IPV victimization reduction have shown limited effectiveness at reducing future IPV, suggesting the need for continued study of IPV victimization risk mechanisms and identification of factors that can also be targeted through treatment (Cattaneo & Goodman, 2005; Eckhardt et al., 2013). Furthermore, to our knowledge, no treatment programs to date have specifically targeted IPV reengagement mitigation. One exception is the Moms' Empowerment Program (MEP; Graham-Bermann, 2011), a community-based psychotherapeutic intervention for women with children who have experienced IPV. The program includes 10 group sessions designed to reduce IPV victimization, with regard to both the degree of victimization and the number of violent partners; PTSS; and depressive symptoms. The MEP utilizes an interpersonal perspective, focusing on participants' strengths and capabilities to address their biopsychosocial needs. Rooted in empowerment theory, the MEP seeks to address power imbalances in participants' lives as a pathway to making positive changes (Graham-Bermann, 2011). Key components of the intervention include creating a sense of empowerment and safety, addressing issues related to the intergenerational transmission of violence, effective communication, emotion regulation, and connecting participants to community resources. Evidence has shown this program to successfully reduce PTSS (Galano et al., 2016; Graham-Bermann & Miller, 2013), depressive symptoms (Stein et al., 2018), and IPV victimization (Miller et al., 2014) in White, Black, Latina, and biracial women. However, continued research is needed to evaluate the effectiveness of the MEP in reducing IPV reengagement over time.

The present study followed women who experienced IPV victimization and also have children over an 8-year period to prospectively examine trauma exposure, mental health, and sociodemographic factors (i.e., income level, employment status, and housing instability) and their potential contributing role in the risk of reengagement. The study also evaluated the effectiveness of the MEP at mitigating reengagement over time. The aim of this research was to add to the limited body of knowledge regarding risk factors for IPV reengagement among women with children, including trauma exposure, mental health, and sociodemographic indicators. Given the review of the literature, we expected that (a) the amount of IPV victimization across 8 years would be positively associated with reengagement, (b) CSA would be associated with increased reengagement, (c) higher levels of cumulative interpersonal trauma exposure would be associated with lower degrees of reengagement, (d) income and employment would be inversely related to reengagement given the well-established associations between income and IPV (Capaldi et al., 2012), and (e) women who participated in the MEP would have lower levels of reengagement compared to those in the control condition. Findings for the association between PTSS and depressive symptoms on the risk of reengagement were inconclusive and, thus, the expected direction of this association is unclear. The present study also explored the associations between reengagement and (a) PTSS over time, (b) depressive symptoms over time, and (c) housing instability.

## Method

### Participants

Participants were drawn from a randomized control trial of an intervention for mothers who had experienced IPV. Women (*N* = 120) with children who experienced IPV within the previous 2 years were randomly assigned to either a treatment group or control group and interviewed at baseline (Time 1), 5 weeks (Time 2), 6 months (Time 3), and 8 years (Time 4) after. In total, 59

women (49.17%) were assigned to the treatment condition (see Figure 1). Data from Times 1, 3, and 4 were utilized for the present study, as IPV was only assessed at these assessment points.

At the time of study enrollment, women ranged in age from 21 to 54 years (*M* = 31.86 years, *SD* = 7.18). Participants came from varied racial groups: 47.5% were White, 36.7% were Black, 5.8% were Latina, and 10.0% reported their race as "other." This was a low-income sample with a mean monthly household income of $1,348 (USD; *SD* = $1,377; range: $0–$9,700). Regarding educational attainment, 40.0% of participants reported having completed high school or less, with 39.2% having completed some college or a vocational degree and 20.8% having a college degree or more. Women had changed their place of residence an average of 3.04 times (*SD* = 2.71) in the prior 4 years, and almost 51.7% of the sample reported having used a domestic violence shelter. At Time 1, 22.5% of women reported being involved with a partner (i.e., violent or nonviolent). Finally, 43.3% of the sample reported having had more than one violent intimate partner in their lifetime.

**Procedure**

Following study approval from the University of Michigan Institutional Review Board (IRB), women with children were initially recruited in between 2006 and 2010 via referrals from agencies that provide services for women who experienced IPV and through postings in local businesses, school campuses, and social service agencies in southeastern Michigan (United States) and southern Ontario (Canada). Recruitment materials included flyers and pamphlets, which provided a toll-free phone number to contact study staff. Women were enrolled in the study if they met the criteria of having experienced at least one act of IPV in the prior 2 years and had a child in the target age range for the study (i.e., 4–6 years). Of the 150 people who called to inquire about the study, 25 did not meet the inclusion criteria and five declined to participate due to time constraints. Using block randomization,

participants were placed in either the treatment group (i.e., receipt of the MEP) or the control group (i.e., no intervention).

After providing written informed consent, women participated in a structured clinical interview. Female research assistants and graduate students in clinical psychology and social work, trained in clinical interviewing techniques and research ethics, administered the interviews. All interviewers received training from a licensed psychologist. Interviews were held at participating service agencies, university research facilities, participants' homes, or local community businesses in accordance with participants' preferences and safety concerns. During the interviews, participants were asked about their IPV exposure, current mental health, trauma history, and demographic information. Interviews lasted 1–2 hr, and participants were compensated $20 for their time. All participant rights were protected.

The MEP intervention consisted of groups of six to eight women who met twice per week for 5 consecutive weeks. Details about the MEP and its theoretical foundations can be found elsewhere (Graham-Bermann, 2011). Program group leaders were either therapists at local mental health clinics and advocacy agencies or graduate students in clinical psychology and social work. All therapists participated in a 6-hr workshop during which they received training in implementing the program. Therapists followed a training manual and received weekly supervision to enhance program adherence. Immediately following each session, group leaders wrote detailed process notes that included a description of the extent to which the treatment manual was followed. These notes were shared with the supervisor and discussed at the next session. Concerns regarding content fidelity were examined in these meetings, including the establishment of a plan to integrate any missed material into the next therapy session. Following completion of the intervention program or the 5-week waiting period (i.e., Time 2), participants completed a second clinical interview. Another follow-up

interview was administered 6–9 months later (i.e., Time 3). For the present study, an 8-year follow-up assessment was added (i.e., Time 4).

Given the amount of time elapsed between Time 3 and Time 4 and the transient nature of this high-risk population, a range of strategies was used to locate and contact the participants. The first attempt to contact participants relied on the contact information initially provided by participants at the first three measurement occasions, including telephone numbers, emails, and home addresses. If women were unable to be reached using this information, subsequent procedures were implemented. These strategies included using social media platforms (i.e., Facebook, Google+, and Instagram), online searches, and people-finding search engines. Women were then either contacted on a social media platform or the information collected was used to make attempted contact via phone or through letters sent to identified addresses. The information included in the follow-up recruitment attempts was intentionally vague to protect the women's privacy and safety. The University of Michigan IRB approved all recruitment procedures and materials.

Upon contact with study staff, women were provided an explanation of the fourth study phase, and their participation was requested. In total, 68 women were located and agreed to take part in a follow-up interview. Similar procedures to the first three assessment points were followed for the interview process. Women were given the option to be interviewed at their residence, if they deemed it appropriate and safe, or provided options to meet at local public places, such as libraries and local businesses. Three of the participants no longer lived in Michigan; study staff traveled to their new states of residence to complete in-person interviews. Women were compensated $75 for their participation in this phase of the study.

**Measures**

### *IPV Reengagement*

Women's reengagement was evaluated at each assessment point using a single question: "How many violent partners have you had in your lifetime?" During exploratory analyses of the data, some statistical concerns emerged. Given that the item asks about lifetime reengagement with violent partners across the three time points, the count of such partners should either remain the same or increase. However, at Time 3, eight women reported fewer violent partners than at Time 1. In addition, at Time 4, 13 women reported having fewer partners than they did at either Time 1 or Time 3. To address this discrepancy in lifetime reengagement, if women reported fewer violent partners at Time 3 relative to Time 1, their Time 1 count was carried forward to replace their original Time 3 count. Likewise, if a participant's Time 4 count was lower than either their Time 1 or Time 3 count, the higher value of the two time points was carried forward to replace the originally reported Time 4 count.

### *IPV Victimization*

The frequency of past-year IPV victimization was evaluated using the Revised Conflict Tactics Scale (CTS-2; Straus et al., 1996). The CTS-2 is a 78-item measure that is used to assess physical assault, sexual coercion, psychological aggression, injury, and negotiation within intimate relationships. Participants were asked to indicate the frequency of IPV events, rating responses on a 7-point Likert-type scale ranging from 0 (*never*) to 7 (*20 times or more*). Although the CTS-2 is used to assess both IPV victimization and perpetration, due to the aims of the present study, only the 39 victimization items were administered. A total IPV score was created by summing all victimization questions except for the six items related to negotiation. Subscale scores for Physical Assault, Sexual Coercion, and Psychological Aggression were created by taking the mean total of the items corresponding to

each subscale. In the present sample, the internal consistency reliability for the total scale was good, Cronbach's α = .92. Cronbach's alpha values for the Physical Assault, Sexual Coercion, and Psychological Aggression subscales were .91, .87, and .84, respectively.

**PTSS**

The Posttraumatic Diagnostic Scale (PDS; Foa et al., 1997), which uses criteria outlined in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*), was used to assess past-month PTSS. Participants rated items using a 4-point Likert-type scale ranging from 0 (*not at all or only one time*) to 3 (*5 or more times a week/almost always*). Participants were asked to identify their worst experience of IPV and report symptoms in relation to that experience. Subscales representing the three *DSM-IV* symptom domains of avoidance, reexperiencing, and arousal were created in addition to a total PTSS sum score, with a possible range of 0 to 51. In the present sample, Cronbach's alpha for internal consistency reliability was .89 for the total scale. Cronbach's alpha values for the Avoidance, Reexperiencing, and Arousal subscales were .76, .81, and .75, respectively.

***CSA***

We assessed sexual abuse in childhood using the item related to CSA on the PDS (Foa et al., 1997). At the first measurement occasion (i.e., Time 1), participants were asked if they experienced sexual contact when they were younger than 18 years of age with someone who was 5 or more years older than them. Responses were dichotomously coded as 0 for "denied" or 1 for "endorsed."

**Cumulative Interpersonal Trauma Exposure**

Participants' cumulative interpersonal trauma exposure was evaluated using items from the PDS (Foa et al., 1997), which include questions about nonsexual and sexual assault, presence in a military combat or war zone, imprisonment, and torture; because it was evaluated as a separate

variable, CSA was not included. At each measurement occasion, participants endorsed or denied experiencing each type of traumatic event. At baseline, women were asked about their lifetime trauma history, whereas at subsequent assessments, they were asked to respond in relation to events that had taken place since the last interview. A total interpersonal trauma score was created from the baseline measurement by summing the seven traumatic events. Participants' cumulative interpersonal trauma score at Time 3 was calculated by summing the baseline interpersonal score with the added interpersonal traumatic events reported since baseline, and participants' cumulative interpersonal trauma score at Time 4 was calculated by summing the baseline interpersonal score, the added interpersonal traumatic events that occurred between baseline and Time 3, and the added interpersonal traumatic events that occurred between Time 3 and Time 4. A Time 4, cumulative interpersonal trauma scores were not able to be calculated for participants who were not present at Time 3.

***Depressive Symptoms***

Depressive symptoms were evaluated using the 20-item, self-report Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977). Women reported the frequency of symptoms over the past week on a 4-point Likert-type scale ranging from 0 (*less than one day per week*) to 3 (*most or all of the time*). Subscales representing four symptom domains (i.e., Negative Affect, Positive Affect, Somatic, and Interpersonal) were generated in addition to a total score. The total score was created using all 20 items, with a possible range of 0 to 60. Positive items were reverse-scored such that higher scores indicated more severe symptoms. In the present sample, Cronbach's alpha for internal consistency reliability was .92 for the total scale; Cronbach's alpha values for the subscales were .82 for Depressed Affect, .80 for Positive Affect, .75 for Somatic Symptoms, and .57 for Interpersonal, which only includes two items.

### *Treatment Group*

Women assigned by block randomization to receive the MEP were categorized as "treatment," whereas those who were not were designated as "control." Treatment group categorization was dummy coded, using 0 for control and 1 for treatment.

### *Demographic Variables*

Women reported their age, ethnoracial identification, educational attainment, relationship status, past domestic violence shelter use, employment status (i.e., employed or unemployed), monthly income, and housing instability (i.e., the number of times they moved).

## Data Analysis

Linear multilevel modeling (MLM) was used to examine participant risk factors (i.e., trauma exposure, mental health, and sociodemographic indicators) for IPV reengagement across 8 years and three measurement occasions. Given the correlations between repeated measures in longitudinal data (Luke, 2004; Singer & Willett, 2003), linear multilevel modeling in Stata (Version 14) was selected as a means to examine women's changes in reengagement over time. MLM can account for observations that are correlated across individuals, thus avoiding the underestimation of standard errors that can produce a statistically significant result when the null hypothesis is actually true (i.e., Type I error; Raudenbush & Bryk, 2002). Model assumptions were met, including that errors at the level of the person-event and the level of the person were normally distributed. As part of standard practice in MLM (e.g., Raudenbush & Bryk, 2002), we first estimated a model with no independent variables to obtain variance components. These variance components then allowed us to calculate the intraclass correlation coefficient (ICC), a measure of the degree to which variation in the dependent variable is explained by time-invariant, person-specific characteristics. Here, the ICC is a

measure of the degree to which differences between participants explained the variation in reengagement (Raudenbush & Bryk, 2002). The following model was estimated: $y_{it} = \beta_0 + \beta_1$(IPV experienced – time-variant) + $\beta_2$(CSA at baseline – time-invariant) + $\beta_3$(Cumulative interpersonal trauma – time variant) + $\beta_4$(Traumatic stress symptoms – time variant) + $\beta_5$(Depressive symptoms – time variant) + $\beta_6$(Employment status – time variant) + $\beta_7$(Income – time variant) + $\beta_8$(Housing instability – time variant) + $\beta_9$(wave) + $\beta_{10}$(Treatment group – time invariant) + $\beta_{11}$(Wave x Treatment Group) + $u_{0i} + e_{it}$. Missing data were handled via listwise deletion: Given that there were multiple rows of data for each participant, participants were included in the analyses if they had complete data for at least one assessment point. In total, 49 women were missing at Time 3 only, 52 were missing at Time 4 only, and 33 women were missing at both Time 3 and Time 4.

A power calculation was conducted to determine the sample size needed to detect a medium effect size correlation between individual independent variables and reengagement. An alpha level of .05 and a power of 0.8 were used as assumptions for the power analysis, which was calculated based on the method of expected data correlations (Champely, 2018; Cohen, 1988). In this sample of 120 women, expected correlations were at least .3, suggesting that only 84 distinct participants were needed for the study to be sufficiently powered. However, due to the longitudinal nature of the data, study participants have assessed an average of approximately 2.5 times, due to study attrition, for a total of 300 observations. Power calculations must also consider the design effects of these intercorrelated observations (Public Health Action Support Team, 2019), which was estimated at 1.75 from these 300 repeated observations. The effective sample size was, thus, estimated at 171 observations, suggesting that the current study was sufficiently powered to proceed with the planned analyses.

## Results

Means and standard deviations for all study variables at each measurement occasion are presented, by treatment group, in Table 1. At baseline, there were no differences between the treatment and waitlist control groups on any of the variables of interest (see Supplemental Table S1 for bivariate correlations for all variables). Women who were not present at Time 4 did not report significantly different levels of reengagement at Time 1, $t(116) = .86$, $p = .391$, or Time 3, $t(61) = .20$, $p = .838$ compared with those who were present at Time 4.

**MLM of Reengagement**

The intraclass correlation coefficient without any predictors in the model was .73, which means that 73% of the variation in reengagement over time was explained by time-invariant differences between women. Including random intercepts for individual participants was a significantly better approach than utilizing regression analyses without accounting for clustering, $\chi^2(1) = 112.98$, $p < .001$. The MLM revealed that neither trauma exposure (i.e., frequency of all types of IPV victimization across time, CSA, and cumulative interpersonal trauma over time) nor mental health concerns (i.e., total PTSS and depressive symptoms over time) were significantly associated with reengagement across the 8-year study period (see Supplemental Table S3). This was also true for employment, monthly income, and housing instability over time.

The results indicated that time was significantly associated with higher levels of reengagement at Time 3, $\beta = .29$, $p = .037$, and Time 4, $\beta = .83$, $p < .001$. Treatment group alone was not significantly associated with reengagement: At baseline, the treatment and control groups did not significantly differ with regard to reengagement. However, the findings revealed that the interaction between time and treatment was significant at Time 4, $\beta = -.79$, $p = .001$, indicating differences in reengagement between treatment and control groups at the 8-year follow-up. Women who participated in the MEP had significantly fewer violent partners at this measurement

occasion than those who did not. The interaction was not significant at Time 3. The main effects can only be interpreted as being directly applicable to the control group given the significant interaction term.

**Post Hoc Analyses**

A post hoc longitudinal MLM was estimated to further examine the potential contributing influence of the domains of IPV victimization, PTSS, and depressive symptoms on women's reengagement, while also including the sociodemographic factors of interest (i.e., employment, income, and housing instability). Three subtypes of IPV (i.e., physical, sexual, and psychological IPV), three components of PTSS (i.e., avoidance, reexperiencing, and arousal), and four domains of depression (i.e., positive affect, depressed affect, somatic symptoms, and interpersonal symptoms), all over time, were included in the model in addition to the predictors included in the primary model. Delineation of the contributing roles of these subtypes and domains to reengagement risk has the potential to provide more nuanced information on mechanisms of risk that may be directly actionable for future treatment tailoring and development.

Table 1 provides descriptive statistics for all predictors for the post hoc analysis for each treatment group as well as across the entire sample. As noted, there were no significant differences at baseline between the treatment and control groups on the variables of interest. For this follow-up analysis, an MLM was a better fit than a linear model, $\chi^2(1) = 130.43$, $p < .001$. The results revealed mixed findings concerning trauma exposure (see Table 2) such that a lower frequency of sexual IPV and a higher frequency of psychological IPV were significantly associated with higher degrees of reengagement over time. However, the frequency of physical IPV victimization over time, CSA, and cumulative interpersonal trauma over time were not significantly associated with reengagement.

An evaluation of the components of mental health revealed that for PTSS, a lower level of reexperiencing symptoms was associated with increased reengagement across time. The PTSS symptom clusters of avoidance and arousal were not significantly associated with women's reengagement over time. Of the four components of depression, higher ratings of positive affect and somatic symptoms were associated with higher levels of reengagement over time. Sociodemographic characteristics were associated with reengagement in the second model such that lower income levels and less housing instability were associated with higher degrees of reengagement. Women's employment status was not significantly related to the outcome variable over time. Time alone was significantly related to increased reengagement at Time 3 and Time 4, indicating significant changes in reengagement for the control group over time. However, treatment group alone was not significantly associated with reengagement, suggesting no differences in reengagement between the treatment and control groups at baseline. The interaction between time and treatment group was significant at Time 4 such that women who received the treatment had significantly fewer violent partners at this measurement occasion than those who did not. The interaction was not significant at Time 3.

## Discussion

In the present study, we sought to identify mechanisms of women with children's risk for IPV reengagement by examining contributors to the risk of lifetime reengagement across 8 years. This research was novel as it uniquely operationalized the IPV reengagement construct; followed participants over an 8-year period; and rigorously assessed IPV victimization and reengagement, cumulative interpersonal trauma, PTS, depression, employment status, income level, and housing instability over three measurement occasions. This study examined how participation in an established intervention affected reengagement, a previously unexplored outcome of intervention

research. This was a novel longitudinal examination of women-with-children's risk for IPV reengagement, with the findings lending mixed support for the proposed hypotheses.

The present findings partially supported the first hypothesis regarding the expected association between IPV over time and reengagement, suggesting that it is not the total amount of IPV victimization that is associated with reengagement risk but rather it is specific forms of this victimization that are related to the risk. Findings from the first model revealed no association between the total amount of IPV over time and women's reengagement. However, findings from the post hoc model revealed that both lower levels of sexual IPV victimization and higher levels of psychological IPV were related to higher degrees of reengagement, which is consistent with previous cross-sectional findings (Stein et al., 2019). In contrast, physical IPV was not significantly associated with reengagement in this sample, which also aligns with prior findings (Alexander, 2009; Stein et al., 2019). It is possible that women more clearly understand certain types of IPV to qualify as violence and, thus, be clearly identified as a problematic relational behavior that then acts as a deterrent from engaging in a relationship with someone. For example, elevated awareness of sexual violence has emerged in the public consciousness in part due to increased sexual assault awareness efforts (Vladutiu et al., 2011), which may have helped to make sexual IPV more readily identifiable and understood as unacceptable to women in the present sample. In contrast, less attention has been given to psychological IPV, which may be more challenging to identify and was correlated with higher rates of reengagement in the present study. Although continued research is needed to fully understand the nuances of past IPV victimization in relation to reengagement risk, the present findings preliminarily suggest the urgency of increasing awareness of what constitutes psychological IPV into prevention and treatment programs to mitigate reengagement.

Surprisingly, the present findings did not support the second hypothesis that women's reported exposure to CSA would be related to reengagement. Past empirical work has established a link between CSA and the risk for IPV reengagement (Alexander, 2009; Stein et al., 2019; Vatnar & Bjørkly, 2008). The design of the present study may account for this difference in findings. In the current study, we uniquely examined the contribution of CSA to reengagement using a longitudinal design across 8 years and simultaneously considered two questions: "what happened to you?" (e.g., CSA) and "how are you doing?" (e.g., PTSS, depression). It is possible that CSA served as a proxy for "how are you doing?" in previous research that did not concurrently and more comprehensively assess symptoms beyond affect dysregulation (Alexander, 2009).

The present findings did not support the hypothesis that higher levels of cumulative interpersonal trauma would be associated with increased reengagement. In fact, the findings revealed no significant relation between cumulative interpersonal trauma and reengagement in either model. This finding contrasts with earlier research that has linked a history of trauma exposure to sexual violence revictimization (Brenner & Ben-Amitay, 2015; Decker & Littleton, 2018), IPV victimization (Whitfield et al., 2003), and IPV reengagement (Alexander, 2009; Cole et al., 2008; Stein et al., 2019). However, considering that this study concurrently assessed trauma history and mental health, the findings suggest that many of the effects of lifetime trauma exposure and reengagement risk may operate through their influence on mental health symptoms. Future research is needed to determine if these symptoms mediate the association between lifetime trauma exposure and reengagement. Furthermore, the present study did not examine cumulative interpersonal trauma during specific sensitive developmental periods. As a substantial body of evidence has identified the importance of early childhood experiences with regard to lifetime relational health (Schore, 2001), future research should examine the importance of cumulative interpersonal trauma exposure during childhood in relation to the risk for IPV reengagement.

The present findings regarding the contribution of PTSS to reengagement were mixed. Total PTSS severity was not significantly associated with reengagement, adding to previous findings (Cole et al., 2008; Stein et al., 2019). However, higher ratings of reexperiencing symptoms were associated with lower levels of reengagement in the present sample, whereas avoidance and arousal were not related. Limited past work has identified reexperiencing as a risk factor for experiencing future IPV (Kuijpers et al., 2012c), but, to our knowledge, no studies to date have examined the role of PTSS symptom domains on reengagement. Work examining the role of PTSS symptom domains in mediating the risk of sexual violence revictimization suggests that higher levels of hyperarousal may be associated with an increased risk of sexual revictimization (Decker & Littleton, 2018). It is possible that PTSS symptom domains differentially contribute to the risk of future IPV given the disparate types of symptoms present in the PTSS diagnostic category (Schauer & Elbert, 2010). Thus, in the context of IPV more broadly, persistent exposure to memories of violent partners may serve a protective function by mitigating the replication of past negative experiences with intimate partners. However, despite this protective status of reexperiencing symptoms, we recognize that increasing PTSS is not an appropriate intervention target. Thus, future work is needed to examine the processes by which high levels of reexperiencing lead to less reengagement. Further understanding of how posttraumatic reexperiencing symptoms buffer against reengagement may serve to inform targets of intervention that could help mitigate risk without diminishing well-being, as likely occurs in individuals with PTSS.

As with PTSS, total depressive symptoms were not associated with IPV reengagement in the present sample. An examination of the association between depressive symptom domains and reengagement revealed that lower levels of positive affect and higher levels of somatic symptoms over time were related to higher levels of reengagement. However, the domains of depressed affect and interpersonal symptoms were not significantly associated with reengagement across the 8-year

study period. These findings suggest that it is not the presence of depressed affect that confers risk over time but rather the absence of positive affect. Furthermore, women's somatic experiences seem to be a risk factor for reengagement. This is an intriguing finding and, potentially, a place of opportunity given the existence of somatically informed intervention modalities, including mindfulness-based contemplative practices (Kabat-Zinn, 2003), sensorimotor psychotherapy (Ogden & Fisher, 2015), and trauma-informed stabilization (Fisher, 2017), all of which address the mind–body connection and somatization. No past research has examined the associations between depression symptom domains and reengagement. Thus, although these study findings are novel, they require further inquiry for rigorous interpretation and contextualization.

Employment status, income, and housing instability were included as sociodemographic variables of interest. The findings suggest that employment status was not significantly associated with reengagement across the 8-year study period, which coincides with limited previous findings (Alexander, 2009). A lower income level was associated with a higher level of reengagement, which aligns with past research showing an inverse relation between income and IPV (Ahmadabadi et al., 2017; Davies et al., 2015), although few studies to date have examined the specific role of income in relation to reengagement risk (Ørke et al., 2018). Women living in economically disadvantaged conditions are more likely to have higher levels of stress, experience more unemployment, and have an exacerbated sense of hopelessness (Capaldi et al., 2012; Davies et al., 2015) in relation to those with higher income levels, which may lead to increased IPV reengagement. Yet, continued research is needed to delineate the precise mechanisms of income-related risk for IPV reengagement among women. Further, lower levels of housing instability were associated with higher levels of reengagement. No previous work has examined the association between housing instability and reengagement, and, thus, it would be presumptuous to draw a conclusion from a single finding.

Continued work is needed to rigorously examine the role of these factors in conferring risk for IPV reengagement.

Finally, the results supported the efficacy of the MEP for the long-term reduction of IPV reengagement in women with children. At the 8-year follow-up assessment, women who received the treatment had significantly fewer violent partners than those in the control group; however, this was not true at the 6-month follow-up. These are encouraging findings for cost-effective group intervention utilizing an empowerment perspective. It is hopeful that these 10 psychotherapy group sessions, each of 1-hr duration, may be sufficient to begin to address women's risk for reengagement, although the reasons why it was effective are unclear.

The present findings provide novel information on what contributes risk and protection to women's IPV reengagement, but the study was not without limitations. The analyses were influenced by issues of missing data due to participant attrition across the 8-year study period. Specifically, it is likely that reengagement data at Time 4 were not missing at random, particularly in the treatment group, as the mean level of reengagement for this group at Time 4 was lower than what was reported at Time 3. It is possible, therefore, that the significant interaction between Time 4 and treatment group is attributable to the IPV reengagement data not being missing at random. Future studies would benefit from additional contact with participants between data collection waves to limit attrition. Although this research examined the novel construct of women's reengagement, the outcome was based on a single-item question. Variation in responses on the item across waves contributed to increased statistical noise and increased difficulty determining the true nature of the observed associations. Future work should focus on the development of a comprehensive assessment tool with increased reliability for assessing reengagement. The present study also did not include any empirical assessment of information regarding partners or

relationships, including relationship length, the amount and type of IPV that occurred during the relationship, any contextual factors, or any information on women's reasons for staying with or barriers to leaving a violent partner. Further research should utilize assessments to comprehensively capture the nature and contextual factors associated with IPV. In addition, the present study did not measure women's IPV perpetration, which further limits important contextual information for understanding the risk of being in a relationship with IPV. Future work should include assessments of potential IPV by both partners.

Although we examined the contributions of PTSS and depressive symptoms to reengagement risk over time, future studies should examine additional and related mental health concerns, such as symptoms of bipolar disorder and borderline personality disorder, and assess whether these symptoms mediate the association between initial IPV victimization and reengagement. The present study did examine CSA, but future research should assess for additional types of childhood trauma (e.g., witnessing IPV, neglect, physical abuse), with attention to the timing of the events. Future studies might also compare the MEP to different types of treatment rather than to a control condition. Finally, women in the present sample had children; as such, the findings may not generalize to those without children.

The present study provided a rich examination of women's risk factors for IPV reengagement using prospective methodology with 8-year longitudinal data. The findings suggest that it is not so much "what happened" (i.e., experiences of abuse) that create risk for reengagement but rather "how you are doing" following trauma (i.e., specific traumatic stress and depressive symptoms). Fortunately, many evidence-based interventions have been shown to be effective in treating PTSS and depression following trauma exposure. Furthermore, the present findings support the effectiveness of the MEP at reducing reengagement in women who received the treatment versus

those in a control condition, as assessed over an 8-year period. Continued work is needed to identify which aspects of the MEP intervention addressed reengagement. Isolation of these change mechanisms could inform larger-scale, cost-effective interventions with broad public health implications. Interventions that target IPV risk could help individuals foster an increased sense of personal efficacy and autonomy in establishing healthy and rewarding intimate relationships.

**Open Practices Statement**

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials can be sent via email to the lead author at steinsf@umich.edu.

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**Table 1.** Study Variables at Time 1, Time 3, and Time 4

| | Time 1: Baseline | | | | | | Time 3: 6 Months | | | | | | Time 4: 8 Years | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Treatment | | | Control | | | Treatment | | | Control | | | Treatment | | | Control | | |
| Variable | *M* | *SD* | % | *M* | *SD* | % | *M* | *SD* | % | *M* | *SD* | % | *M* | *SD* | % | *M* | *SD* | % |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reengagement | 1.50 | 0.76 | 1.72 | 1.14 | 1.70 | 0.81 | 2.27 | 1.39 | 1.60 | 0.85 | 2.45 | 1.48 | | |
| > 1 violent partner | 43.1 | | 43.3 | | 51.3 | | 63.3 | | 45.7 | | 75.8 | | | |
| Employment | 40.7 | | 36.1 | | 50.0 | | 45.7 | | 65.7 | | 72.7 | | | |
| Monthly income ($) | 1,280 | 1,097 | 1,411 | 1,601 | 2,086 | 2,051 | 1,379 | 1,180 | 3,234 | 3,286 | 2,107 | 1,676 | | |
| Housing instability | 3.31 | 2.44 | 2.78 | 2.94 | 3.36 | 2.87 | 2.54 | 2.37 | 3.34 | 2.79 | 2.76 | 2.53 | | |
| Total IPV | 201.79 | 151.42 | 180.64 | 125.98 | 28.11 | 48.01 | 50.14 | 65.48 | 40.00 | 71.79 | 30.50 | 44.23 | | |
| Physical IPV | 4.96 | 5.23 | 4.45 | 4.18 | 0.20 | 0.61 | 0.70 | 1.49 | 0.43 | 1.12 | 0.37 | 1.20 | | |
| Sexual IPV | 3.47 | 5.33 | 3.87 | 5.82 | 0.14 | 0.48 | 0.38 | 1.03 | 1.37 | 3.34 | 0.17 | 0.56 | | |
| Psych IPV | 12.58 | 7.26 | 11.48 | 6.03 | 3.19 | 5.47 | 4.73 | 5.99 | 3.06 | 5.58 | 2.85 | 3.27 | | |
| CSA | 44.1 | | 49.2 | | - | | - | | - | | - | | | |
| CIT | 1.47 | 1.22 | 1.57 | 1.28 | 2.13 | 2.43 | 2.11 | 2.32 | 4.56 | 4.81 | 3.73 | 3.22 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 5 | 1 | 0 | 3 | 6 | 5 |
| PTSS | 21.86 | 12.61 | 22.08 | 11.17 | 15.68 | 11.28 | 13.00 | 10.30 | 15.83 | 13.44 | 19.41 | 13.08 |
| Avoidance | 8.23 | 5.90 | 8.24 | 4.80 | 6.76 | 5.67 | 4.94 | 4.81 | 6.71 | 6.20 | 7.88 | 5.91 |
| Reexperiencing | 6.51 | 4.15 | 5.93 | 3.97 | 3.40 | 3.70 | 2.76 | 3.00 | 3.14 | 3.56 | 4.06 | 4.26 |
| Arousal | 7.12 | 4.39 | 7.92 | 4.36 | 5.26 | 4.13 | 5.29 | 4.18 | 5.80 | 4.92 | 7.38 | 5.11 |
| Depressive symptoms | 25.66 | 13.26 | 25.75 | 14.04 | 18.56 | 11.40 | 16.97 | 9.85 | 18.80 | 11.40 | 20.16 | 12.81 |
| Positive affect | 4.86 | 3.40 | 4.93 | 3.25 | 3.36 | 2.98 | 4.11 | 3.50 | 3.09 | 3.01 | 4.28 | 3.03 |
| Depressed affect | 6.71 | 4.18 | 6.80 | 4.13 | 4.24 | 3.31 | 3.63 | 2.84 | 4.57 | 4.15 | 4.72 | 4.17 |
| Somatic | 7.17 | 4.00 | 7.27 | 4.05 | 5.94 | 3.46 | 5.03 | 3.31 | 6.49 | 3.53 | 5.91 | 3.87 |
| Interpersonal | 2.32 | 1.81 | 2.17 | 1.87 | 1.72 | 1.58 | 1.09 | 1.17 | 1.49 | 1.70 | 1.75 | 1.67 |

*Note*. There were no significant differences between the treatment and waitlist control groups on any of the indicator variables at baseline. IPV = intimate partner violence; CSA = childhood sexual abuse; CIT = cumulative interpersonal trauma

**Table 2**

*Post Hoc Analysis: Linear Multilevel Model Estimating Reengagement Over 8 Years Using Intimate Partner Violence (IPV), Posttraumatic Stress Symptom (PTSS), and Depressive Symptom Subscales*

| Variable | *B* | β | *SE* | *Z* | *p* | 95% CI | Estimate | *SE* | 95% CI |
|---|---|---|---|---|---|---|---|---|---|
| Fixed effects | | | | | | | | | |
| Physical IPV | -0.006 | -.022 | .016 | -0.39 | .693 | [-0.037, 0.024] | | | |
| Sexual IPV | -0.022 | -.085 | .011 | -1.99 | .046 | [-0.043, 0.000] | | | |
| Psych IPV | 0.024 | .160 | .009 | 2.59 | .010 | [0.006, 0.043] | | | |
| CSA | 0.280 | .125 | .187 | 1.49 | .136 | [-0.088, 0.647] | | | |
| CIT | 0.019 | .044 | .021 | 0.92 | .357 | [-0.022, 0.060] | | | |
| Avoidance | 0.018 | .088 | .011 | 1.53 | .126 | [-0.005, | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 1 | | 6 | 0.040] |
| Reexperiencing | - 0.034 | - .125 | .01 4 | - 2.46 | .01 4 | [-0.061, - 0.007] |
| Arousal | 0.001 | .004 | .01 7 | 0.06 | .95 3 | [-0.031, 0.033] |
| Positive affect | - 0.037 | - .109 | .01 8 | - 2.08 | .03 8 | [-0.072, - 0.002] |
| Depressed affect | - 0.030 | - .109 | .01 9 | - 1.61 | .10 8 | [-0.067, 0.007] |
| Somatic symptoms | 0.047 | .161 | .01 7 | 2.75 | .00 6 | [0.013, 0.080] |
| Interpersonal symptoms | 0.033 | .050 | .03 3 | 0.98 | .33 0 | [-0.033, 0.098] |
| Employment | - 0.084 | - .038 | .09 9 | - 0.85 | .39 4 | [-0.277, 0.109] |
| Income level | - 0.000 | - .106 | .00 0 | - 2.49 | .01 3 | [0.000, 0.000] |
| Housing instability | - 0.041 | - .098 | .01 9 | - 2.12 | .03 4 | [-0.079, - 0.003] |
| Wave 3 | 0.272 | .305 | .11 | 2.38 | .01 | [0.048, |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 4 | | 7 | 0.496] |
| Wave 4 | 0.816 | .914 | .135 | 6.04 | .000 | [0.551, 1.081] |
| Treatment group | -0.242 | .109 | -.182 | -1.33 | .184 | [-0.598, 0.115] |
| Wave 3 x Treatment | -0.142 | .203 | -.135 | -1.05 | .294 | [-0.406, 0.123] |
| Wave 4 x Treatment | -0.522 | .747 | -.158 | -3.31 | .001 | [-0.831, -0.212] |
| Constant | 1.698 | | .215 | 7.90 | .000 | [1.277, 2.119] |
| Random effects | | | | | | |
| Person-level variance | | | | | 0.798 | 0.119 | [0.595, 1.069] |
| Residual variance | | | | | 0.113 | 0.017 | [0.084, 0.152] |

*Note.* CSA = childhood sexual abuse; CIT = cumulative interpersonal trauma.

**Figure 1.** Moms' Empowerment Program (MEP) CONSORT Flow Diagram. *Note.* ITT = intent to treat