

Testing Posttraumatic Stress as a Mediator of Childhood Trauma and Adult Intimate Partner Violence Victimization

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This study examined whether potential posttraumatic stress disorder (PTSD) mediated the relationships between different forms of childhood trauma (sexual abuse, physical abuse, violence between caregivers) and intimate partner violence (IPV) victimization (psychological, physical, sexual). Participants were 1,150 female nurses and nursing personnel. Path analytic findings revealed potential PTSD partially mediated the relationships between childhood sexual abuse and psychological IPV and childhood sexual abuse and sexual IPV. Potential PTSD did not mediate the relationship between other types of childhood trauma and IPV. This study adds to the literature indicating PTSD as a risk factor for

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revictimization in the form of adult IPV among women. Screening for and treatment of PTSD among female child sexual abuse survivors could prevent future IPV victimization.

KEYWORDS *childhood abuse, child abuse, domestic violence, IPV, path analysis, PTSD, sexual abuse, women*

Violence against women is a serious public health problem associated with negative physical and mental health outcomes, morbidity, and mortality. Experiences of violence across the life span are common for women. Rates of childhood trauma including childhood physical abuse, childhood sexual abuse (CSA), and witnessing violence between caregivers during childhood, range from 13.5% to 19.7% (Edwards, Holden, Felitti, & Anda, 2003; Molnar, Buka, & Kessler, 2001). Approximately one quarter of adult women in the United States report lifetime experiences of physical or sexual intimate partner violence (IPV; Black et al., 2011; Breiding, Black, & Ryan, 2005; Tjaden & Thoennes, 2000), and lifetime experiences of psychological abuse (e.g., emotional abuse, controlling behavior, harassment, and stalking) range up to 35% (Jones et al., 1999). Depending on the definition of IPV and whether male-to-female violence, female-to-male violence, or any partner violence is being examined, rates of IPV could be reported as much higher than this. For example, IPV in the context of marriage has been reported to affect up to 21.5% of couples each year in the form of physical violence (Schafer, Caetano, & Clark, 1998) and up to 98.5% in the form of psychological aggression (O'Leary & Williams, 2006).

Many types of violence against women cooccur, including various types of childhood trauma (e.g., childhood physical abuse, CSA, and witnessing IPV during childhood) and IPV (e.g., psychological, physical, and sexual; Campbell, Greeson, Bybee, & Raja, 2008; Cavanaugh et al., 2012; Dong et al., 2004; Scott-Storey, 2011). A child who experiences physical abuse, for example, is 2.4 times more likely to experience CSA and 4.7 times more likely to witness IPV as a child (Dong et al., 2004). Similarly, women who experience psychological abuse by an intimate partner are also likely to experience intimate partner physical and sexual violence (Cavanaugh et al., 2012; Smith, Thornton, DeVellis, Earp, & Coker, 2002). In addition, women who experience childhood trauma are at greater risk for experiencing IPV during adulthood. For example, survivors of CSA are two to five times more likely to experience physical, sexual, or emotional violence as adults than those not abused in childhood (Arata, 2002; Bensley, Van Eenwyk, & Simmons, 2003; Desai, Arias, Thompson, & Basile, 2002; Dunkle et al., 2004; Merrill, Newell, Gold, & Milner, 1999; Orcutt, Cooper, & Garcia, 2005; Roodman & Clum, 2001; Urquiza & Goodlin-Jones, 1994), and women who have experienced childhood physical abuse or witnessed interparental violence are at

two to six times higher risk of physical IPV in adulthood (Bensley et al., 2003; Coker, Smith, McKeown, & King, 2000; Schaaf & McCanne, 1998).

Preliminary research suggests that posttraumatic stress disorder (PTSD), which is common among childhood abuse survivors (Becker, Stuewig, & McCloskey, 2010; Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Famularo, Fenton, Augustyn, & Zuckerman, 1996; Hetzel & McCanne, 2005; Lang et al., 2008; McLeer et al., 1998; Paolucci, Genuis, & Violato, 2001; Schaaf & McCanne, 1998), might mediate the relationship between childhood trauma and revictimization (Arata, 2000; Engstrom, El-Bassel, Go, & Gilbert, 2008; Risser, Hetzel-Riggin, Thomsen, & McCanne, 2006; Ullman, Najdowski, & Filipas, 2009; West, Williams, & Siegel, 2000), including IPV (Engstrom et al., 2008; West et al., 2000). For example, a recent cross-sectional study with women in methadone treatment found PTSD and psychological distress to be a mediator between CSA and adult IPV, although it did not distinguish between types of IPV (Engstrom et al., 2008). Krause, Kaltman, Goodman, and Dutton (2006) found that the numbing symptom of PTSD increased the risk for reabuse after controlling for IPV severity, IPV relationship characteristics, and childhood abuse history; these authors suggested that numbing leads to an increased likelihood of entering into an abusive intimate relationship and, subsequently, makes it more difficult for that survivor to leave the abusive relationship. Other authors have suggested that PTSD symptoms such as arousal or hyperarousal and dissociation might impede the recognition of danger cues or differentiation between minor and serious danger cues and lead to revictimization (Cloitre, Scarvalone, & Difede, 1997; Risser et al., 2006; Wilson, Calhoun, & Bernat, 1999).

Although preliminary evidence suggests that PTSD might mediate the relationships between CSA and adult sexual victimization (Arata, 2000; Risser et al., 2006) and CSA and IPV (Engstrom et al., 2008; West et al., 2000) among women, there has been little examination of whether PTSD mediates other forms of childhood trauma and IPV. This is despite evidence that childhood physical abuse and witnessing parental IPV is associated with adult IPV victimization, and PTSD is associated with all forms of childhood trauma (Famularo et al., 1996; McLeer et al., 1998) and adult IPV (Arias & Pape, 1999; Becker et al., 2010; Pico-Alfonso, 2005; Roberts, Lawrence, Williams, & Raphael, 1998; Street & Arias, 2001; Taft, Murphy, King, Dedejn, & Musser, 2005; Woods, 2000). Theoretically, PTSD might mediate the relationship between childhood and adult victimization regardless of the specific type of childhood trauma and adult revictimization examined.

Many studies examining revictimization utilize college student samples (e.g., Arata, 2002; Classen, Paresh, & Aggarwal, 2005) or marginalized populations (e.g., Engstrom et al., 2008). Marginalized women might be experiencing greater levels of PTSD and additional life stressors such as unemployment, homelessness, drug abuse, and additional mental health problems. This research is the first to examine the relationship between

different forms of childhood trauma and adult IPV among a sample of employed adults. Examining a single form of trauma, as most previous research has done, results in the oversight of the negative effects of the cooccurrence of abuse (Dong et al., 2004; Humphreys, Sharps, & Campbell, 2005). Previous research examining the relationship of CSA to adult sexual assault, for example, might unwittingly be examining the effects of the cooccurrence of physical childhood abuse, adult physical abuse, or both with childhood and adult sexual abuse. Therefore, this research examines the individual relationships between each form of trauma and the outcome, controlling for the relationships between other forms of trauma, to allow for a better understanding of the specific effects of each form of childhood trauma on adult IPV outcomes and their relationship to PTSD as a mediator of these relationships. A closer examination of the relationship among PTSD, various forms of childhood trauma, and adult IPV, particularly with an understudied population, will assist in better understanding the dynamics of these relationships.

Mediation analyses have the ability to examine the pathways among childhood trauma, PTSD, and adult victimization. This study used path analysis to examine if potential PTSD mediated the relationships among three types of childhood trauma (childhood physical abuse, CSA, and parental IPV during childhood) and three types of IPV (psychological, physical, and sexual). We hypothesized the following: (a) the three types of childhood trauma will be directly associated with potential PTSD; (b) potential PTSD will be directly associated with all three types of IPV; and (c) potential PTSD will fully or partially mediate the relationships among the three types of childhood trauma and the three types of IPV. Given literature suggesting age, race or ethnicity, and having children are associated with IPV, those variables were controlled in the path model.

METHOD

Participants and Procedures

The research presented here is a secondary analysis of data collected in the Safe at Work study, a prospective case control study focused on examining differences between nurses and nursing personnel who have experienced workplace violence (WPV) and those who have not. Nurses and nursing personnel from three hospitals and one geriatric care center in one mid-Atlantic metropolitan area were recruited through flyers, e-mails, and announcements posted in their workplace. The study was approved by the Human Investigation Committee of Johns Hopkins University. An initial, confidential self-report survey designed to examine the prevalence of WPV was administered to 1,981 female nurses and nursing personnel (for the purposes of these analyses, men were excluded from the sample). Of those women who

completed an initial survey, 1,239 completed a follow-up assessment six months later. During the baseline assessment, information regarding participants' demographics, history of childhood trauma, and IPV was obtained. At the six-month follow-up, participants were also asked whether they had experienced IPV since the baseline assessment and about potential PTSD. Eighty-nine women had missing data on the variables of interest for this study and were removed from this analysis, leaving a final sample size of 1,150. Forty-eight of the women with missing data were missing data regarding their age. Analyses were run to compare whether there were significant differences between participants with and without missing data on dependent and demographic variables including age, education, marital status, race or ethnicity, age, income, and whether women had children. Participants with missing data were significantly more likely to be non-White and have lower household income.

Participants in this study were between 18 and 71 years old ($M = 38.86$, $SD = 11.32$) and predominately White (65.2%). Non-White participants were primarily African American (20.8%) and Asian (9.3%). Half of the participants had children (50.0%). The majority were married (54.3% married, 28.4% never married, 8.8% divorced, 4.6% unmarried couple, 2.3% separated, 1.4% widowed). More than half of the sample (51.2%) reported an income of \$80,000 or greater and reported completing a 4-year college or having a graduate degree (65.6%).

Study Variables

PSYCHOLOGICAL IPV

During the baseline and six-month follow up assessments, participants were asked "Have you been emotionally abused or sexually harassed by a former or current intimate partner?" either ever (at baseline) or since the last survey (at follow-up). Respondents who answered in the affirmative to this question at baseline or at follow-up were coded as 1 for the psychological IPV variable. Those who did not respond in the affirmative to either question were coded 0.

PHYSICAL IPV

The following question from the Abuse Assessment Screen (AAS; Rabin, Jennings, Campbell, & Bair-Merritt, 2009) was used to assess women's history of physical IPV at baseline and follow-up: "Have you been hit, slapped, kicked, pushed, or otherwise physically hurt by a former or current intimate partner?" either ever (at baseline) or since the last survey (follow-up). Respondents who answered in the affirmative to this question at baseline or follow-up were coded as 1 for the physical IPV variable and 0 otherwise.

SEXUAL IPV

At baseline and follow-up, participants were asked the following question from the AAS: “Have you been forced into sexual activities by a former or current intimate partner?” either ever (at baseline) or since the last survey (follow-up). Respondents who answered in the affirmative at baseline or follow-up were coded as 1 for sexual IPV and 0 otherwise.

POTENTIAL PTSD

At the follow-up assessment, the Primary Care Post-Traumatic Stress Disorder (PC-PTSD) instrument was administered (Prins et al., 2003). This is a 4-item screen for PTSD designed for use in medical settings. This instrument is a recommended screen (Davis, Whitworth, & Rickett, 2009) and has been used in population-based research examining the relationship of PTSD to childhood and adult victimization (e.g., Kimerling, Alvarez, Pavao, Kaminski, & Baumrind, 2007) as well as to screen for PTSD in research among war veterans (e.g., Milliken, Auchterlonie, & Hoge, 2007). The PC-PTSD has demonstrated good interrater reliability and very good agreement regarding the presence or absence of PTSD with a current clinician-administered PTSD Scale PTSD diagnosis ($K = 0.85$). An affirmative response to three of the four items has been found to be optimal with good sensitivity (0.70), specificity (0.84), and efficiency (0.81) among women (Prins et al., 2003). In this analysis, a cutoff score of 3 indicates a positive screen for potential PTSD. As the PC-PTSD is not a diagnostic tool, this research refers to potential PTSD, not a PTSD diagnosis.

CHILDHOOD TRAUMA

Trauma in childhood—including physical abuse, sexual abuse, and parents or caregivers engaging in IPV—was ascertained during the baseline assessment with the following three questions, respectively: (a) “As a child, were you ever physically abused (spanked a lot, whipped, hit with objects, etc.) by a parent or another adult or caretaker?”; (b) “As a child, did anyone ever touch you in a way you did not wish to be touched, or force you into any kind of sexual activity?”; and (c) “While you were growing up, was your parent or guardian physically abused by his or her partner?” Affirmative responses to each question were coded as 1 and 0 otherwise.

DEMOGRAPHICS

At the baseline assessment, participants were asked about age, racial or ethnic background, education, income, and number of children. Racial or ethnic background was dichotomized with White coded as 0 and non-White coded

as 1. Number of children was also dichotomized; participants with children were coded as 1 and participants without children were coded as 0.

SAMPLING DESIGN CONTROL

Because WPV is also associated with other types of violence, analyses were run to examine whether there were meaningful differences between the baseline stratified groups and violence exposure including childhood physical abuse, CSA, witnessing domestic violence during childhood, psychological IPV, physical IPV, and sexual IPV, as well as PTSD symptoms, race or ethnicity, and age. Results revealed that significantly more cases (i.e., those who experienced WPV) than controls (i.e., those who did not experience WPV) reported positive histories of childhood physical abuse, CSA, and all three types of IPV. Cases were also significantly more likely to be White. There were no significant differences between cases and controls with respect to witnessing domestic violence during childhood, PTSD symptoms, or participant age. To account for these differences in the sampling design, analyses controlled for whether participants were selected as cases or controls. Controls were coded as 0 and cases were coded as 1.

Data Analysis

Descriptive statistics and correlations for variables of interest were obtained using SPSS version 15. Correlations between dichotomous variables were based on the phi coefficient, whereas those between a dichotomous and continuous variable were based on the point biserial coefficient. Data were exported from SPSS 15 to *Mplus* Version 5 (Muthén & Muthén, 2007) to use path analysis to test (a) direct paths linking types of childhood trauma with types of IPV (dichotomous outcomes), and (b) indirect paths linking types of childhood trauma to types of IPV through potential PTSD in one model. Weighted least squares parameter estimates were used to estimate parameters in the model. Model fit was based on the Comparative Fit Index (CFI; nonsignificant chi square), Tucker–Lewis Index (values greater than .95), and root mean square error of approximation (RMSEA; below .06; Hu & Bentler, 1999) fit statistics.

RESULTS

The prevalence of women in this sample reporting childhood trauma, adult IPV, and potential PTSD is as follows: 23.4% ($n = 269$) reported lifetime psychological IPV, 19.4% ($n = 223$) reported lifetime physical IPV, and 8.3% ($n = 96$) reported lifetime sexual IPV. In regard to childhood trauma, 18.1% ($n = 208$) of the sample reported having experienced childhood physical

TABLE 1 Correlations Matrix for Variables of Interest

Variable	Correlations											
	1	2	3	4	5	6	7	8	9	10	11	
1. Psychological IPV	—											
2. Physical IPV	.58**	—										
3. Sexual IPV	.38**	.31**	—									
4. Potential PTSD	.15**	.08*	.16**	—								
5. Childhood physical abuse	.16**	.14**	.14**	.08*	—							
6. Childhood sexual abuse	.20**	.21**	.20**	.11**	.26**	—						
7. Parents/caregivers IPV	.11**	.14**	.09**	.09**	.36**	.18**	—					
8. Age	.11**	.13**	.03	-.03	.06	.04	.01	—				
9. Race	-.02	.06*	.00	.01	.07*	.05†	.13**	-.04	—			
10. Children	.06*	.07*	.02	.02	-.01	.07*	.01	.21**	.15**	—		
11. Baseline stratification	.14**	.12**	.11**	.05†	.12**	.10**	.03	.04	-.15**	-.02	—	

Note. $N = 1,150$. IPV = intimate partner violence; PTSD = posttraumatic stress disorder.

* $p < .05$. ** $p < .01$. † $p < .10$.

abuse, 17.3% ($n = 199$) reported CSA, and 10.4% ($n = 120$) reported IPV between their parents or caregivers during childhood. Seventy women (6.1%) endorsed three items on the PC-PTSD indicating a positive screen for potential PTSD.

As hypothesized, childhood physical abuse, CSA, and witnessing IPV during childhood were each significantly associated with psychological, physical, and sexual IPV in bivariate analyses (Table 1). Furthermore, potential PTSD was significantly associated with all three types of childhood trauma variables and all three types of IPV. These correlations, although significant, are not strong with correlation coefficients for the bivariate relationships between various forms of childhood and adult trauma and potential PTSD ranging between .08 and .16. Among the participants who experienced CSA, experienced childhood physical abuse, or witnessed IPV between parents or caregivers during childhood, slightly more of the participants who experienced CSA also experienced potential PTSD (32.9%) than did participants who experienced childhood physical abuse (30.0%) or IPV between parents or caregivers during childhood (21.4%), although none of these differences are significant.

The path model tested had good model fit, $\chi^2(3) = 2.72$, $p = .44$, CFI = 1.00, TFI = 1.00, RMSEA = .00. This is consistent with the recommendations of Hu and Bentler (1999) for good model fit. The final model with standardized path coefficients is presented in Figure 1. CSA, but not childhood physical abuse or IPV between caregivers during childhood, was significantly associated with potential PTSD ($p < .05$). Potential PTSD was significantly associated with psychological IPV ($p < .001$) and sexual IPV

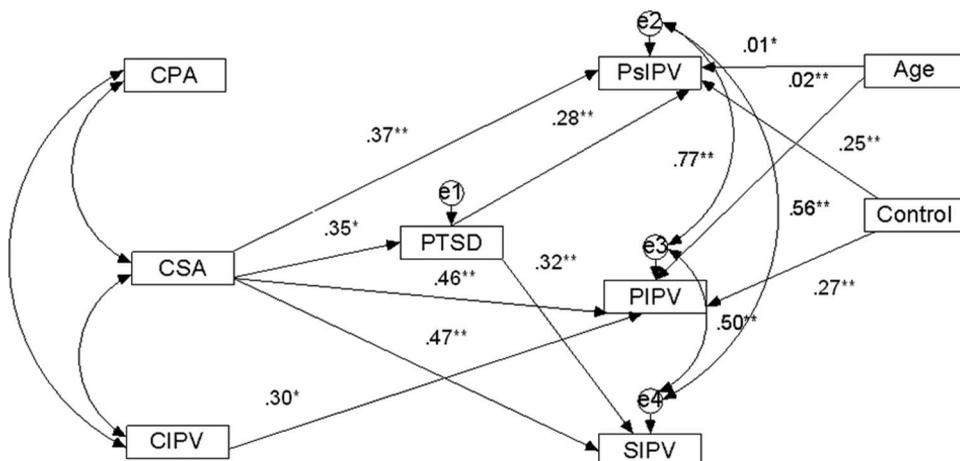


FIGURE 1 Final model. *Note.* IPV = intimate partner violence; CPA = childhood physical abuse; CSA = childhood sexual abuse; CIPV = IPV between parents or caregivers during childhood; PsiIPV = psychological IPV; PIPV = physical IPV; SIPV = sexual IPV.

($p < .001$). However, when controlling for other variables in the model, potential PTSD was not significantly associated with physical IPV as was hypothesized. There were significant direct relationships between CSA and all three types of IPV and also between IPV between caregivers during childhood and physical IPV.

Given the lack of information regarding effect sizes in this area of research, Kline (2005) suggests that standardized path coefficients with an absolute value of approximately .30 can be considered medium and those with an absolute value that approximates .50 or greater can be considered large. Therefore, most relationships reported in the model can be considered to be of moderate effect size, including the relationships between CSA and PTSD, between PTSD and psychological and sexual IPV, and between CSA and psychological IPV. Large effect sizes were found between CSA and physical IPV and CSA and sexual IPV.

These findings suggest that potential PTSD partially mediated the relationships between CSA and psychological IPV and CSA and sexual IPV. Contrary to our hypothesis, potential PTSD did not mediate the relationship between childhood physical abuse and all three types of IPV, nor between parents or caregivers IPV and experiencing IPV as an adult.

DISCUSSION

Much research has demonstrated that there is a relationship between childhood trauma and subsequent experiences of IPV (Bensley et al., 2003; Coker et al., 2000; Desai et al., 2002; Dunkle et al., 2004; Kimerling et al., 2007);

these relationships are supported by the findings of this study, which also indicate that the pathway might not be a direct trajectory. The finding that potential PTSD partially mediates the relationship between CSA and psychological and sexual IPV contributes to the growing body of literature implicating the sequelae of childhood victimization as a mediator of the relationship between childhood and adult trauma (Arata, 2000; De Bellis et al., 1999; Engstrom et al., 2008; Messman-Moore & Long, 2003). The effect sizes for the relationships among CSA, PTSD, psychological IPV, and sexual IPV can be considered moderate; this supports a conclusion of partial mediation between these variables within this sample as the relationships between CSA and PTSD, PTSD and psychological IPV, PTSD and sexual IPV, CSA and psychological IPV, and CSA and sexual IPV are of approximately the same magnitude and cannot be considered weak. Most previous research has examined PTSD as a mediator of the relationship between CSA and adult sexual assault (Arata, 2000; Risser et al., 2006) and, more recently, between CSA and adult IPV (Engstrom et al., 2008; West et al., 2000); this research indicates that the mediating effects of potential PTSD between CSA and adult psychological and sexual IPV might be more pronounced than for other forms of trauma. However, because PTSD is related to all forms of childhood trauma and adult IPV in bivariate analyses, it is important to continue examining PTSD as a mediator of the various forms of childhood trauma and IPV. If PTSD partially mediates these relationships, treatment for childhood trauma focusing on PTSD symptomology might have an impact on reducing subsequent abuse in adulthood.

This research did not find PTSD to have a mediating effect between childhood physical abuse and any form of adult IPV, witnessing IPV as a child and experiencing IPV as an adult, or CSA and physical IPV. Hetzel and McCanne (2005) found that CSA (alone or in combination with childhood physical abuse) is significantly more likely than childhood physical abuse alone to be associated with PTSD in adulthood. A meta-analysis noted at least a 20% increase in PTSD for those who experienced CSA (Paolucci et al., 2001). The findings of this research, therefore, might reflect the increased likelihood of experiencing potential PTSD due to CSA in relation to other forms of childhood trauma. Similarly, this might reflect a weaker relationship between physical IPV and PTSD. The mediating effect of PTSD on the relationship between CSA and adult sexual assault has been found in previous research (Arata, 2000; Risser et al., 2006), as has the mediating effect of PTSD on CSA and IPV (Engstrom et al., 2008; West et al., 2000), although not specifically in terms of intimate partner sexual assault or emotional abuse. PTSD has also been found to have a stronger relationship with emotional IPV than other forms of IPV (Arias & Pape, 1999; Street & Arias, 2001; Taft et al., 2005). Given that this is one of the few studies examining relationships between various types of childhood and adult trauma, more work is needed in this

area to better understand potentially distinct pathways between childhood trauma and adult IPV.

The null findings, that PTSD does not mediate the relationship between childhood physical abuse and the various types of IPV, nor does it mediate the relationship between witnessing IPV as a child and the various types of IPV, should be interpreted cautiously. This could be an artifact of the measurements used (see later section on strengths and limitations), the specific sample, or the relatively low number of participants who experienced these forms of childhood trauma (particularly witnessing IPV as a child). However, this might also indicate that the type of trauma is important when examining PTSD as a mediator between childhood and adult trauma. Sexual assault, including CSA, can be a particularly traumatic event. In population-based research, rape and sexual molestation were identified as the traumatic events most likely associated with PTSD among women (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Similarly, women who experience more sexual violence (including CSA, adult sexual assault, and sexual harassment) are more likely to experience adverse physical and mental health outcomes, including PTSD symptoms, over and above the effects of other forms of cooccurring violence. Experiencing physical abuse or witnessing IPV as a child might not have the same traumatic impact as CSA. PTSD resulting from CSA might have more severe symptoms and persist for longer periods of time; future research should examine this. Alternatively, the traumatic impact of other forms of childhood trauma could have different behavioral and emotional sequelae.

The lifestyle and exposure model suggests that it is the emotional and behavioral effects of childhood trauma that lead to increased vulnerability to later assault (Arata, 2002). Psychological distress (e.g., depression, anxiety) and the use of sex to reduce negative affect partially mediate the relationship between CSA and adult sexual assault (Orcutt *et al.*, 2005). Research has indicated that survivors of CSA and adult sexual assault perceive less danger associated with risky sexual behaviors and illicit drug use (Smith, Davis, & Fricker-Elhi, 2004), and that social and behavioral risk factors such as these could account in part for the relationship between childhood trauma and adult IPV (Fargo, 2009). Messman-Moore, Ward, and Brown (2009) examined the relationship among sexual revictimization, PTSD, and substance abuse and found that CSA predicts PTSD symptomology, and the relationship between PTSD and sexual assault is mediated by substance use. Although their sample consisted primarily of college students who experienced incapacitated rape (rather than forcible rape), this suggests that the link between PTSD and revictimization might not be direct, but mediated by behavioral risk factors. It could be that the null findings regarding PTSD as a mediator of the relationship among childhood physical abuse, witnessing parental IPV, and IPV in adulthood might be attributed to additional yet unmeasured mediating factors. Future research should examine the social and behavioral

risk factors associated with physical childhood abuse and witnessing IPV as a child.

The findings of this research, particularly the strong relationships between childhood sexual abuse and physical and sexual IPV, support previous findings that experiences of childhood trauma increase the risk of IPV (Bensley et al., 2003; Coker et al., 2000; Whitfield, Anda, Dube, & Felitti, 2003). However, previous research has demonstrated that revictimization in adolescence could be a stronger predictor of IPV than some childhood traumas. Prospective studies have found a stronger relationship between victimization in adolescence and adult revictimization than between CSA and adult revictimization (Arata, 2002; Classen et al., 2005; Humphrey & White, 2000; Gidycz, Coble, Latham, & Layman, 1993), lending support to the hypothesis that recency of abuse might be a better predictor of revictimization than distal incidents of abuse (Himelein, 1995; Humphrey & White, 2000). The use of cross-sectional data and retrospective self-report are serious limitations to understanding patterns of revictimization over time (Arata, 2002; Classen et al., 2005; Messman-Moore, Coates, Gaffey, & Johnson, 2008). Future research on mediating factors between experiences of violent victimization from a life course perspective could further clarify this trajectory.

Strengths and Limitations

Findings should be interpreted in the context of study limitations. Path analysis was used to model the variables in a particular temporal order. Ideally, information on the variables of interest would have been collected in the order in which they were modeled. In this research, information on childhood trauma was collected at baseline, information on IPV was collected at both baseline and follow-up, and information on potential PTSD was collected only at follow-up. Thus, given the study design, it is not clear that potential PTSD temporally precedes experiences of adult IPV in this sample. Further, as the PTSD screen was not tied to any particular index trauma, it is unknown whether the potential PTSD reported by participants was the result of childhood trauma or some other trauma. Although this global measure of PTSD is of low participant burden, it was limited in that it does not have the ability to provide insight into what form(s) of prior victimization impair the participant at present. For example, PTSD reported in this sample might be related to experiences of IPV or, because nurses experience high rates of workplace violence (Campbell et al., 2011), it could be that reports of PTSD are tied to experiences of workplace violence and not to childhood trauma. Nonetheless, both empirical evidence and theories explaining the relationship between childhood and adult trauma justify the hypotheses and the modeling of these relationships in this manner. If PTSD is not tied to childhood trauma in this sample, the results and conclusions drawn from

these results could be invalidated. This is not an ideal temporal arrangement, and future research should examine longitudinally the trajectory of these three variables. Despite these limitations, this research is the first to examine potential PTSD as a mediator of the relationship between various forms of childhood trauma and adult IPV. In contrast to studies limited by only a single measure of victimization, inclusion of three separate measures of childhood trauma (physical, sexual, and witnessing IPV) and IPV (physical, sexual, and psychological) allowed for analysis of separate, specific trajectories from childhood to adulthood trauma.

The results of this study must also be interpreted with regard to several limitations of measurement. Consistent with victimization literature, physical, sexual, and psychological IPV were identified from self-reported data wherein participants identified themselves as abused rather than relying on behaviorally based measures of violence that do not require the participant to interpret the behavior as "abuse." Self-reported assessments of a sensitive nature are vulnerable to information bias, which can hamper the estimation of true IPV exposure (Tourangeau & Yan, 2007). In terms of the questions assessing childhood trauma, the question assessing CSA was the only question that did not require the participant to identify abuse, but rather asked about the behavioral indicators of unwanted touching and sexual assault. For example, with regard to physical abuse, the participant needed to identify his or her experience as physical childhood abuse; a participant who was hit as a child—even one who was hit with an object—might consider this discipline rather than abuse, potentially leading to underreporting. The same is true for witnessing IPV. The necessity of defining one parent as being abused by another could also explain the low rates of witnessing IPV relative to childhood physical and sexual abuse. To be consistent, these questions would have been improved by asking only about behavioral indicators of trauma (e.g., spanked a lot, whipped, hit with objects). Underreporting of the other childhood trauma variables might help to explain why CSA was the only form of childhood trauma to have PTSD as a mediator of IPV. Each childhood and adult trauma variable was assessed using only a single dichotomous question, rather than a more comprehensive assessment. This might have increased the potential for Type II error as there might not have been enough power to detect significant relationships between variables. Race or ethnicity was dichotomized into White and non-White, which does not allow an examination of the variation among non-White respondents. For example, recent research has demonstrated that African American women who have experienced IPV are less likely than White women to have symptoms of PTSD, but Latina and Native American women are similar to Whites in terms of PTSD symptoms (Wilson et al., 2011). This is not conclusive, but future research should examine the relationship of PTSD with race or ethnicity. Potential PTSD in this study was based on a 4-item screening tool rather than a clinical diagnosis. Although the PC-PTSD has been

found to have good agreement with the clinician-administered PTSD Scale in regard to the presence or absence of PTSD (Prins et al., 2003), findings might have been different had PTSD been based on a clinical diagnosis. This research was unable to examine PTSD symptom clusters, although future research should attempt to tease out more clearly the PTSD symptom clusters associated with adult intimate partner revictimization. For example, further examination of whether the numbing or hyperarousal symptoms of PTSD lead to an impairment in assessing danger cues specifically in regard to intimate partner relationships is warranted, as is an examination of the specific symptom clusters that are associated with the various forms of childhood trauma and IPV.

By examining a large sample of employed adult women, this research extends previous findings to an understudied population. The sample is nonetheless limited as it consists solely of nurses and nursing personnel in a single U.S. metro area. All participants were employed within the health care sector and, thus, are not representative of the population of survivors of childhood trauma and IPV. Additionally, because this sample is employed, the prevalence of potential PTSD might be less than in an unemployed sample of IPV survivors as IPV and the attendant mental health challenges could make it difficult to obtain or maintain employment (Staggs, Long, Mason, Krishnan, & Riger, 2007). Although participants in this study experienced childhood and adult victimization at levels similar to those experienced in the general population, these results must be replicated with larger and more diverse samples to provide greater confidence in their veracity across populations.

CONCLUSIONS

This research provides evidence to suggest that it is the effects of CSA (i.e., PTSD symptoms), not necessarily the trauma itself, that is predictive of psychological and sexual victimization in adulthood by an intimate partner. This is similar to the relationship between CSA and adult sexual assault. These findings provide evidence that revictimization in adulthood by an intimate partner is a very complex process with many intermediate pathways and offers insight of potential clinical relevance. As many authors have pointed out, the abuser holds sole responsibility for abusive behavior. Yet, gaining an understanding of the mechanisms by which childhood trauma increases the risk for future victimization empowers vulnerable survivors of childhood trauma to work through the mental health consequences of the trauma that they experienced and might allow them to break the cycle of violence in their own lives (see Arata, 2002). As researchers gain a greater understanding of the mechanisms and mental health sequelae underlying IPV, it is necessary to reconceptualize the relationship between childhood

trauma and intimate partner revictimization. Rather than placing the cause for abuse on deficiencies in the character of the survivor, it is possible to point to clearly identifiable and treatable mental health consequences of childhood trauma. Recognizing and addressing psychological impairment through appropriate screening and referral mechanisms could offer survivors of childhood trauma protection against experiencing violence as an adult.

REFERENCES

- Arata, C. M. (2000). From child victim to adult victim: A model for predicting sexual revictimization. *Child Maltreatment, 5*(1), 28–38. doi:10.1177/1077559500005001004
- Arata, C. M. (2002). Child abuse and sexual revictimization. *Clinical Psychology: Science and Practice, 9*(2), 135–164. doi:10.1093/clipsy/9.2.135
- Arias, I., & Pape, K. T. (1999). Psychological abuse: Implications for adjustment and commitment to leave violence partners. *Violence and Victims, 14*(1), 55–67.
- Becker, K. D., Stuewig, J., & McCloskey, L. A. (2010). Traumatic stress symptoms of women exposed to different forms of childhood victimization and intimate partner violence. *Journal of Interpersonal Violence, 25*(9), 1699–1715. doi:10.1177/0886260509354578
- Bensley, L., Van Eenwyk, J., & Simmons, K. W. (2003). Childhood family violence history and women's risk for intimate partner violence and poor health. *American Journal of Preventative Medicine, 25*(1), 38–44. doi:10.1016/S0749-3797(03)00094-1
- Black, M. C., Basile, K. C., Breiding, M. J., Smith, S. G., Walters, M. L., Merrick, M. T., . . . Stevens, M. R. (2011). *The National Intimate Partner and Sexual Violence Survey: 2010 summary report*. Atlanta, GA: Centers for Disease Control and Prevention.
- Breiding, M., Black, M. C., & Ryan, G. W. (2005). Prevalence and risk factors of intimate partner violence in eighteen U.S. states/territories. *American Journal of Preventative Medicine, 34*(2), 112–118.
- Campbell, J. C., Messing, J. T., Kub, J., Agnew, J., Fitzgerald, S., Fowler, B., . . . Bolyard, R. (2011). Workplace violence: Prevalence and risk factors in the Safe at Work Study. *Journal of Occupational & Environmental Medicine, 53*(1), 82–89. doi:10.1097/JOM.0b013e3182028d55
- Campbell, R., Greeson, M. R., Bybee, D., & Raja, S. (2008). The co-occurrence of childhood sexual abuse, adult sexual assault, intimate partner violence, and sexual harassment: A mediation model of posttraumatic stress disorder and physical health outcomes. *Journal of Consulting and Clinical Psychology, 76*(2), 194–207. doi:10.1037/0022-006X.76.2.194
- Cavanaugh, C. E., Messing, J. T., Petras, H., Fowler, B., LaFlair, L., Kub, J., . . . Campbell, J. C. (2012). Patterns of violence against women: A latent class analysis. *Psychological Trauma, 4*(2), 169–176. doi:10.1037/a0023314

- Classen, C. C., Palesh, O. G., & Aggarwal, R. (2005). Sexual revictimization: A review of the empirical literature. *Trauma, Violence & Abuse, 6*(2), 103–129. doi:10.1177/1524838005275087
- Cloitre, M., Scarvalone, P., & Difede, J. (1997). Posttraumatic stress disorder, self- and interpersonal dysfunction among sexually retraumatized women. *Journal of Traumatic Stress, 10*(3), 437–452. doi:10.1002/jts.2490100309
- Coker, A. L., Smith, P. H., McKeown, R. E., & King, M. R. (2000). Frequency and correlates of intimate partner violence by type: Physical, sexual and psychological battering. *American Journal of Public Health, 90*(4), 553–559. doi:10.2105/AJPH.90.4.553
- Davis, S. M., Whitworth, J. D., & Rickett, K. (2009). Clinical inquiries. What are the most practical primary care screens for post-traumatic stress disorder? *The Journal of Family Practice, 58*(2), 100–101.
- De Bellis, M. D., Keshavan, M. S., Clark, D. B., Casey, B., Giedd, J. N., Boring, A. M., . . . Ryan, N. D. (1999). Developmental traumatology part II: Brain development. *Biological Psychiatry, 45*(10), 1271–1284. doi:10.1016/S0006-3223(99)00045-1
- Desai, S., Arias, I., Thompson, M. P., & Basile, K. C. (2002). Childhood victimization and subsequent adult revictimization assessed in a nationally representative sample of women and men. *Violence and Victims, 17*(6), 639–653. doi:10.1891/vivi.17.6.639.33725
- Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., . . . Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect and household dysfunction. *Child Abuse & Neglect, 28*(7), 771–784. doi:10.1016/j.chiabu.2004.01.008
- Duncan, R., Saunders, B., Kilpatrick, D., Hanson, R., & Resnick, H. (1996). Childhood physical assault as a risk factor for PTSD, depression, and substance abuse: Findings from a national survey. *American Journal of Orthopsychiatry, 66*(3), 437–448. doi: 10.1037/h0080194
- Dunkle, K. L., Jewkes, R. K., Brown, H. C., Yoshihama, M., Gray, G. E., McIntyre, J. A., & Harlow, S. D. (2004). Prevalence and patterns of gender-based violence and revictimization among women attending antenatal clinics in Soweto, South Africa. *American Journal of Epidemiology, 160*(3), 230–239. doi:10.1093/ajph.100.0000247582.00826.52
- Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the Adverse Childhood Experiences study. *American Journal of Psychiatry, 160*(8), 1453–1460. doi:10.1176/appi.ajp.160.8.1453
- Engstrom, M., El-Bassel, N., Go, H., & Gilbert, L. (2008). Childhood sexual abuse and intimate partner violence among women in methadone treatment: A direct or mediated relationship? *Journal of Family Violence, 23*(7), 605–617. doi:10.1007/s10896-008-9183-6
- Famularo, R., Fenton, T., Augustyn, M., & Zuckerman, B. (1996). Persistence of pediatric post traumatic stress disorder after 2 years. *Child Abuse & Neglect, 20*(12), 1245–1248. doi:10.1016/S0145-2134(96)00119-6
- Fargo, J. D. (2009). Pathways to adult sexual revictimization: Direct and indirect behavioral risk factors across the lifespan. *Journal of Interpersonal Violence, 24*(11), 1771–1791. doi:10.1177/0886260508325489

- Gidycz, C. A., Coble, C. N., Latham, L., & Layman, M. J. (1993). Sexual assault experience in adulthood and prior victimization experiences: A prospective analysis. *Psychology of Women Quarterly, 17*(2), 151–168. doi:10.1111/j.1471-6402.1993.tb00441.x
- Hetzel, M. D., & McCanne, T. R. (2005). The roles of peritraumatic dissociation, child physical abuse, and child sexual abuse in the development of posttraumatic stress disorder and adult victimization. *Child Abuse & Neglect, 29*(8), 915–930. doi:10.1016/j.chiabu.2004.11.008
- Himelein, M. J. (1995). Risk factors for sexual victimization in dating: A longitudinal study of college women. *Psychology of Women Quarterly, 19*(1), 31–48. doi:10.1111/j.1471-6402.1995.tb00277.x
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55. doi:10.1080/10705519909540118
- Humphrey, J. A., & White, J. W. (2000). Women's vulnerability to sexual assault from adolescence to young adulthood. *Journal of Adolescent Health, 27*(6), 419–424. doi:10.1016/S1054-139X(00)00168-3
- Humphreys, J., Sharps, P. W., & Campbell, J. C. (2005). What we know and what we still need to learn. *Journal of Interpersonal Violence, 20*(2), 182–187. doi:10.1177/0886260504268766
- Jones, A. S., Gielen, A. C., Campbell, J. C., Schollenberger, J., Dienemann, J. A., Kub, J., . . . Wynne, E. C. (1999). Annual lifetime prevalence of partner abuse in a sample of female HMO enrollees. *Women's Health Issues, 9*(6), 295–305. doi:10.1016/S1049-3867(99)00022-5
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *The Archives of General Psychiatry, 52*(12), 1048–1060. doi:10.1001/archpsyc.1995.03950240066012
- Kimerling, R., Alvarez, J., Pavao, J., Kaminski, A., & Baumrind, N. (2007). Epidemiology and consequences of women's revictimization. *Women's Health Issues, 17*(2), 101–106. doi:10.1016/j.whi.2006.12.002
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guilford.
- Krause, E. D., Kaltman, S., Goodman, L., & Dutton, M. A. (2006). Role of distinct PTSD symptoms in intimate partner reabuse: A prospective study. *Journal of Traumatic Stress, 19*(4), 507–516. doi:10.1002/jts.20136
- Lang, A. J., Aarons, G. A., Gearity, J., Laffaye, C., Satz, L., Dresselhaus, T. R., & Stein, M. B. (2008). Direct and indirect links between childhood maltreatment, posttraumatic stress disorder, and women's health. *Behavioral Medicine, 33*(4), 125–135. doi:10.3200/BMED.33.4.125-136
- McLeer, S. V., Dixon, J. F., Henry, D., Ruggiero, K., Escovitz, K., Niedda, T., & Scholle, R. (1998). Psychopathology in non-clinically referred sexually abused children. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(12), 1326–1333. doi:10.1097/00004583-199812000-00017
- Merrill, L. L., Newell, C. E., Gold, S. R., & Milner, J. S. (1999). *Child abuse and sexual revictimization in a female Navy recruit sample*. San Diego, CA: Naval Health Research Center.

- Messman-Moore, T. L., Coates, A. A., Gaffey, K. J., & Johnson, C. F. (2008). Sexuality, substance abuse and susceptibility to victimization: Risk for rape and sexual coercion in a prospective study of college women. *Journal of Interpersonal Violence, 23*(12), 1730–1746. doi:10.1177/0886260508314336
- Messman-Moore, T. L., & Long, P. J. (2003). The role of childhood sexual abuse sequelae in the sexual revictimization of women: An empirical review and theoretical reformulation. *Clinical Psychology Review, 23*(4), 537–571. doi:10.1016/S0272-7358(02)00203-9
- Messman-Moore, T. L., Ward, R. M., & Brown, A. L. (2009). Substance use and PTSD symptoms impact the likelihood of rape and revictimization among college women. *Journal of Interpersonal Violence, 24*(3), 499–521. doi:10.1177/0886260508317199
- Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association, 298*(18), 2141–2148. doi:10.1001/jama.298.18.2141
- Molnar, B. E., Buka, S. L., & Kessler, R. C. (2001). Child sexual abuse and subsequent psychopathology: Results from the national comorbidity survey. *American Journal of Public Health, 91*(5), 753–760. doi:10.2105/AJPH.91.5.753
- Muthén, L. K., & Muthén, B. O. (2007). *Mplus user's guide: Statistical analysis with latent variables* (5th ed.). Los Angeles, CA: Authors.
- O'Leary, K. D., & Williams, M. C. (2006). Agreement about acts of aggression in marriage. *Journal of Family Psychology, 20*(4), 656–662. doi:10.1037/0893-3200.20.4.656
- Orcutt, H. K., Cooper, M. L., & Garcia, M. (2005). Use of sexual intercourse to reduce negative affect as a prospective mediator of sexual revictimization. *Journal of Traumatic Stress, 18*(6), 729–739. doi:10.1002/jts.20081
- Paolucci, E. O., Genuis, M. L., & Violato, C. (2001). A meta-analysis of the published research on the effects of child sexual abuse. *The Journal of Psychology, 135*(1), 17–36. doi:10.1177/1524838010386812
- Pico-Alfonso, M. A. (2005). Psychological intimate partner violence: The major predictor of posttraumatic stress disorder in abused women. *Neuroscience and Biobehavioral Reviews, 29*(1), 181–193. doi:10.1016/j.neubiorev.2004.08.010
- Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., . . . Sheikh, J. I. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry, 9*(1), 9–14. doi:10.1185/135525703125002
- Rabin, R., Jennings, J., Campbell, J., & Bair-Merritt, M. (2009). Intimate partner violence screening tools: A systematic review. *American Journal of Preventive Medicine, 36*(5), 439–445. doi:10.1016/j.amepre.2009.01.024
- Risser, H. J., Hetzel-Riggin, M. D., Thomsen, C. J., & McCanne, T. R. (2006). PTSD as a mediator of sexual revictimization: The role of reexperiencing, avoidance, and arousal symptoms. *Journal of Traumatic Stress, 19*(5), 687–698. doi:10.1002/jts.20156
- Roberts, G. L., Lawrence, J. M., Williams, G. M., & Raphael, B. (1998). The impact of domestic violence on women's mental health. *The Australian and New Zealand Journal of Public Health, 22*(7), 796–801. doi:10.1111/j.1467-842X.1998.tb01496.x

- Roodman, A. A., & Clum, G. A. (2001). Revictimization rates and method variance: A meta-analysis. *Clinical Psychology Review, 21*(2), 183–204. doi:10.1016/S0272-7358(99)00045-8
- Schafer, J., Caetano, R., & Clark, C. L. (1998). Rates of intimate partner violence in the United States. *American Journal of Public Health, 88*(11), 1702–1704.
- Schaff, K. K., & McCanne, T. R. (1998). Relationship of childhood sexual, physical and combined sexual and physical abuse to adult victimization and posttraumatic stress disorder. *Child Abuse & Neglect, 22*(11), 1119–1133. doi:10.1016/S0145-2134(98)00090-8
- Scott-Storey, K. (2011). Cumulative abuse: Do things add up? An evaluation of the conceptualization, operationalization and methodological approaches in the study of the phenomenon of cumulative abuse. *Trauma, Violence, & Abuse, 12*(3), 135–150. doi:10.1177/1524838011404253
- Smith, D. W., Davis, J. L., & Fricker-Elhi, A. E. (2004). How does trauma beget trauma? Cognitions about risk in women with abuse histories. *Child Maltreatment, 9*(3), 292–303. doi:10.1177/1077559504266524
- Smith, P. H., Thornton, G. E., DeVellis, R., Earp, J., & Coker, L. (2002). A population based study of the prevalence and distinctiveness of battering, physical assault and sexual assault in intimate relationships. *Violence Against Women, 8*(10), 1208–1232. doi:10.1177/107780102236534
- Staggs, S. L., Long, S. M., Mason, G. E., Krishnan, S., & Riger, S. (2007). Intimate partner violence, social support, and employment in the post-welfare reform era. *Journal of Interpersonal Violence, 22*(3), 345–367. doi:10.1177/0886260506295388
- Street, A. E., & Arias, I. (2001). Psychological abuse and posttraumatic stress disorder in battered women: Examining the roles of shame and guilt. *Vio & Victims, 16*(1), 65–78. Retrieved from <http://www.ingentaconnect.com.ezproxy1.lib.asu.edu/content/springer/vav/2001/00000016/00000001/art00005?token=00471f74ddcd7efa089124939412f415d7670256f702a4a6c2a246a532530332948b510>
- Taft, C. T., Murphy, C. M., King, L. A., Dedejn, J. M., & Musser, P. H. (2005). Posttraumatic stress disorder symptomatology among partners of men in treatment for relationship abuse. *Journal of Abnormal Psychology, 114*(2), 259–268. doi:10.1037/0021-843X.114.2.259
- Tjaden, P., & Thoennes, N. (2000). *Extent, nature and consequences of intimate partner violence: Findings from the National Violence Against Women Survey* (Report No. NCJ 18186). Washington, DC: U.S. Department of Justice, National Institute of Justice.
- Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin, 133*(5), 859–883. doi:10.1037/0033-2909.133.5.859
- Ullman, S. E., Najdowski, C. J., & Filipas, H. H. (2009). Child sexual abuse, post-traumatic stress disorder, and substance use: Predictors of revictimization in adult sexual assault survivors. *Journal of Child Sexual Abuse: Research, Treatment & Program Innovations for Victims, Survivors, & Offenders, 18*(4), 367–385. doi:10.1080/10538710903035263
- Urquiza, A. J., & Goodlin-Jones, B. L. (1994). Child sexual abuse and adult revictimization with women of color. *Violence & Victims, 9*(3), 223–232. Retrieved from <http://ejournals.ebsco.com.ezproxy1.lib.asu.edu/direct.asp?ArticleID=4C3189DEC5BBB76765DF>

- West, C. M., Williams, L. M., & Siegel, J. A. (2000). Adult sexual revictimization among Black women sexually abused in childhood: A prospective examination of serious consequences of abuse. *Child Maltreatment, 5*(1), 49–57. doi:10.1177/1077559500005001006
- Whitfield, C. L., Anda, R. F., Dube, S. R., & Felitti, V. J. (2003). Violent childhood experiences and the risk of intimate partner violence in adults: Assessment in a large health maintenance organization. *Journal of Interpersonal Violence, 18*(2), 166–185. doi:10.1177/0886260502238733
- Wilson, A. E., Calhoun, K. S., & Bernat, J. A. (1999). Risk recognition and trauma-related symptoms among sexually revictimized women. *Journal of Consulting and Clinical Psychology, 67*(5), 705–710. doi:10.1037/0022-006X.67.5.705
- Wilson, J. S., West, J., Messing, J. T., Brown, S., Patchell, B., & Campbell, J. C. (2011). Factors related to post traumatic stress symptoms in women experiencing police involved intimate partner violence. *ANS, 34*(3), E14–E28. doi:10.1097/ANS.0b013e318227241d
- Woods, S. J. (2000). Prevalence and patterns of posttraumatic stress disorder in abused and postabused women. *Issues in Mental Health Nursing, 21*(3), 309–324. doi:10.1177/0886260504267882