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Childhood Sexual Abuse and Intimate Partner Violence among Women in Methadone Treatment: A Direct or Mediated Relationship?

Malitta Engstrom,

School of Social Service Administration, University of Chicago, 969 East 60th Street, Chicago, IL 60637, USA

Nabila El-Bassel,

Social Intervention Group, Columbia University School of Social Work, New York, NY, USA

Hyun Go,

RAND, Santa Monica, CA, USA

Louisa Gilbert

Social Intervention Group, Columbia University School of Social Work, New York, NY, USA

Abstract

Women in substance use treatment report rates of childhood sexual abuse and intimate partner violence that far exceed those reported by women in the general population. Previous research with nonrandom samples of women in substance use treatment suggests that there is a statistically significant relationship between childhood sexual abuse and intimate partner violence; however, little is known about the mechanisms of risk between these two public health concerns among this population of women. To address this gap in knowledge and to inform intervention strategies, this study examined direct and mediated relationships between childhood sexual abuse and intimate partner violence risk among a random sample of 416 women in methadone treatment. In addition to high rates of childhood sexual abuse (57.9%), intimate partner violence (lifetime prevalence, 89.7%; 6-month prevalence, 78.4%), posttraumatic stress disorder (PTSD, 28.6%), and global psychological distress (19.5%), findings suggest that the relationship between childhood sexual abuse and intimate partner violence is mediated by mental health problems and that women experiencing PTSD or global psychological distress are 2.7 and 2.4 times more likely to experience intimate partner violence than women without such experiences, respectively. Although not a mediator in this relationship, financial independence reduced women's risk of partner violence by two-thirds. The paper includes discussion of social learning and stress and coping theories to explicate the findings and to inform intervention strategies.

Keywords

Childhood sexual abuse; Intimate partner violence; Methadone treatment; Posttraumatic stress disorder; Dual diagnosis

mve@uchicago.edu.

Background and Significance

Women in substance use treatment report considerably higher rates of both childhood sexual abuse and intimate partner violence in comparison to women in the general population. Prevalence estimates of childhood sexual abuse among women in substance use treatment are as high as 75% (Miller et al. 1993; Rohsenow et al. 1988), in comparison to probability and non-probability samples of women with rates ranging from 15–45% (Briere et al. 1994; Finkelhor and Dziuba-Leatherman 1994; Finkelhor et al. 1990; Russell 1983; Wonderlich et al. 1996; Wyatt 1992). Lifetime estimates of partner violence among this group range from 60–75% (American Medical Association 1992; Bennett and Lawson 1994; El-Bassel et al. 2000; Gilbert et al. 1997; Gilbert et al. 2000) in comparison to rates ranging from 21 to 34% among probability samples (Browne 1993). The alarmingly high prevalence of childhood sexual abuse and experiences of partner violence among women in substance use treatment programs underscores the significance of these public health issues among this population and prompts investigation of their interrelationship.

Research with women in substance use treatment suggests that women with a reported history of childhood sexual abuse are at increased risk of experiencing partner violence in adulthood (El-Bassel et al. 2000; Gilbert et al. 1997; Gilbert et al. 2000). While this prior research lays an important foundation for knowledge in this area, its ability to inform generalizable conclusions is limited by its nonrandom samples. To our knowledge, the current study is the first to examine the relationship between childhood sexual abuse and intimate partner violence among a random sample of women in methadone treatment and the first to examine pathways through which childhood sexual abuse increases the risk of intimate partner violence among this group of women.

The rationale for hypothesizing mediated relationships between childhood sexual abuse and intimate partner violence is supported by a large body of literature which suggests that factors associated with increased risk of intimate partner violence, such as mental health problems, substance use, limited social support, and limited socioeconomic resources, are more likely among women who report a history of childhood sexual abuse in comparison to women who do not report such abuse (Boney-McCoy and Finkelhor 1996; Boyd 1993; Briere and Elliott 2003; Browne and Finkelhor 1986; Fergusson et al. 1996; Galaif et al. 2001; Krause et al. 2006; Merrill et al. 2001; Molnar et al. 2001; Mullen et al. 1996; Roosa et al. 1999; Simpson and Miller 2002; Stein et al. 1988; Whiffen et al. 2000; Wilsnack et al. 1997; Wind and Silvern 1992). While it is critical to recognize that childhood sexual abuse often occurs in the context of numerous familial and socioeconomic conditions that may increase one’s vulnerability to a range of negative psychological and social outcomes (Briere 1992; Horwitz et al. 2001; Mullen et al. 1996; Rind et al. 1998; Widom et al. 1999), even research that controls for such confounding influences suggests that self-reported childhood sexual abuse is associated with powerful negative sequelae (Boney-McCoy and Finkelhor 1996; Merrill et al. 2001; Molnar et al. 2001; Roosa et al. 1999; Widom et al. 1999). Specifically, numerous studies indicate that childhood sexual abuse is associated with a range of mental health problems, including posttraumatic stress disorder and symptoms (Boney-McCoy and Finkelhor 1996; Briere and Elliott 2003; Merrill et al. 2001; Molnar et al. 2001; Wind and Silvern 1992), depression (Boney-McCoy and Finkelhor 1996;

Fergusson et al. 1996; Mullen et al. 1996; Wilsnack et al. 1997), suicidality and self harm (Browne and Finkelhor 1986; Fergusson et al. 1996; Mullen et al. 1996) and anxiety (Fergusson et al. 1996; Molnar et al. 2001; Wilsnack et al. 1997). In conjunction with research that finds associations between mental health problems and increased risk of victimization in adulthood (Krause et al. 2006; Sandberg et al. 1999; Teplin et al. 2005), these two bodies of literature suggest that the mental health problems which follow childhood sexual abuse may in turn increase the risk of intimate partner violence among women in substance use treatment. It is important to note that some research has found differential impact of childhood sexual abuse on adult mental health among women of diverse racial and ethnic backgrounds (Roosa et al 1999) and differing characteristics of childhood sexual abuse among women from diverse racial backgrounds (Wyatt et al. 1999), which underscores the significance of considering race and ethnicity in multivariate analyses of the relationship between childhood sexual abuse and intimate partner violence.

The role of substance use as a potential mediator between childhood sexual abuse and intimate partner violence is supported by findings from numerous studies which indicate that childhood sexual abuse is associated with increased risk of substance use problems (Boyd 1993; Galaif et al. 2001; Jasinski et al. 2000; Molnar et al. 2001; Simpson and Miller 2002; Stein et al. 1988; Wilsnack et al. 1997) and by findings from longitudinal studies with women in methadone treatment that the use of heroin, cocaine, marijuana, and tranquilizers is associated with increased risk of experiencing intimate partner violence (Brewer et al. 1998; El-Bassel et al. 2005). Although familial factors, such as parental substance abuse, can increase the likelihood of substance use problems (Schuck and Widom 2001; Simpson and Miller 2002), research which controls for the influence of parental substance abuse continues to find that there is increased risk of problematic substance use among women who have experienced childhood sexual abuse (Galaif et al. 2001; Jasinski et al. 2000; Molnar et al. 2001; Simpson and Miller 2002).

Research also suggests that there is a significant relationship between childhood sexual abuse, mental health problems, and subsequent substance use and that substances are likely to be used to manage psychological distress (Simpson and Miller 2002). Further, substance use may contribute to psychological distress (Rao et al. 2000). In combination, these findings indicate that the relationship between mental health and substance use is likely an interrelated and potentially bidirectional one. Thus, in addition to considering the potential mediating roles of mental health and substance use in the relationship between childhood sexual abuse and intimate partner violence, mental health and substance use variables are included in the multivariate analysis to control for potential confounding.

Social support plays several important roles in the dynamic interplay between childhood sexual abuse, mental health, substance use, and intimate partner violence risk. Specifically, social support is an important protective factor in mitigating the effects of childhood sexual abuse (Lynskey and Fergusson 1997; Romans et al. 1995; Springs and Friedrich 1992) and intimate partner violence (Coker et al. 2002), and reducing the risk of drug and alcohol problems (Broome et al. 2002; Galaif et al. 1999; Galaif et al. 2001; Leonardson and Loudenburg 2003; Satre et al. 2004; Schuck and Widom 2001), psychological distress (Astin et al. 1993; Romans et al. 1995; Tan et al. 1995; Thompson et al. 2000; Whiffen et al. 1999;

Whiffen et al. 2000), and partner violence (El-Bassel et al. 2001; Gilbert et al. 1997; Short et al. 2000; Sullivan et al. 1992). Interpersonal difficulties and limited social support in the wake of childhood sexual abuse (Browne and Finkelhor 1986; Whiffen et al. 2000) may not only restrict women's social resources, but may also contribute to increased likelihood of mental health and substance use problems. Given the negative impact of childhood sexual abuse on one's social relationships, the potential that limitations in available social support may make the relationship with one's intimate partner even more compelling (Amaro and Hardy-Fanta 1995), and the protective role that social support plays in reducing the risk of intimate partner violence, social support may be an important mediator in the relationship between childhood sexual abuse and intimate partner violence.

Women's appraisal of their options and their coping strategies to address violence in their intimate relationships are likely to be informed by power differentials in their relationships, especially by gender-related power discrepancies among women with male partners (Amaro 1995). This study considers one element of unequal relational power, women's financial dependence on their partners, which is associated with increased risk of intimate partner violence (Forte et al. 1996). Prior research suggests that women who report a history of childhood sexual abuse have more limited socioeconomic resources than women who do not report such histories (Mullen et al. 1996). In combination, these findings suggest that childhood sexual abuse may result in economic vulnerability and financial dependence upon one's intimate partner. Such economic reliance upon her partner may constrain a woman's ability to address the violence she is experiencing or to exit a violent relationship, resulting in greater exposure to partner violence.

Based on this integrated review of literature on child-hood sexual abuse sequelae and risk factors for intimate partner violence exposure, this study examined direct and mediated relationships between childhood sexual abuse and intimate partner violence while controlling for sociodemographic characteristics and other potential confounders, including mental health, substance use, social support, and financial independence, which have been associated with intimate partner violence (Astin 1993; Brewer et al. 1998; El-Bassel et al. 2001; El-Bassel et al. 2000; Forte et al. 1996; Gilbert et al 1997; Hien et al. 2000; Krause et al. 2006; Schiff et al. 2002; Short et al. 2000; Smith 1990; Sullivan et al. 1992; Tan et al. 1995; Thompson et al. 2000). Specifically, this study tested the following hypotheses among this random sample of women in methadone treatment:

> Hypothesis 1: There will be a statistically significant direct relationship between childhood sexual abuse and intimate partner violence in the last 6 months and in one's lifetime, even when adjusting for potential confounders.
>
> Hypothesis 2: The relationship between childhood sexual abuse and intimate partner violence in the past 6 months will be mediated by mental health, substance use, social support, and financial independence.

Methods

Participants

A total of 753 women enrolled in methadone treatment was selected from the 1,708 women in 14 methadone treatment programs in New York City by using random number generation in SPSS 7.0. Of the 753 randomly-selected women who were enrolled in methadone treatment at the time of screening, 559 completed brief screening interviews; 427 fulfilled eligibility criteria. Ultimately, 416 women met eligibility criteria for the study, completed informed consent procedures, and participated in baseline interviews. Although this project gathered data at baseline, 6 months, and 12 months, this study relied solely on the data gathered in the baseline interviews, which began in January 1998. The Institutional Review Boards at Columbia University and at the methadone treatment programs approved the research protocol and the participation of human subjects in this study.

Eligibility Criteria for Study Participation

Women between the ages of 18 and 55 who were enrolled in methadone treatment for more than 3 months were eligible to participate in the study if, in the past year, they engaged in a sexual or dating relationship, cohabitated, or shared economic resources with someone whom they described as their boyfriend, girlfriend, spouse, regular sexual partner, or father of their children.

Procedures

A total of 416 women met with trained female interviewers for in-person interviews. Spanish-speaking participants met with Spanish-speaking interviewers. Interviews addressed numerous domains, including sociodemographic background, drug use, sexual behavior, intimate partner violence, childhood sexual abuse history, help-seeking, social support, psychological distress, criminal victimization, and general health.

Measures

Childhood sexual abuse—Childhood sexual abuse was measured via the Childhood Sexual Abuse Interview (CSAI; El-Bassel et al. 1998) which was formulated based on interview schedules created by Finkelhor (1979) and Sgroi (1982). The CSAI is conducted with adults and elicits retrospective self-reports of sexual experiences that occurred prior to age 15. The sexual experiences included exposure, touching, picture taking, penetration, and other sexual contact. Classification of “abuse” was made based on the presence of at least one of the following conditions in the sexual experience: the act was committed by someone who was 5 or more years older than the participant or who was a relative; or the act involved the use of force.

Intimate partner violence—The Revised Conflict Tactics Scale (CTS2) was used to measure experiences of partner violence. The CTS2 is a 39-item instrument which measures negotiation, psychological aggression, sexual coercion, physical assault, and injury; the internal consistency of these subscales ranges from.79 to.95 (Straus et al. 1996). In this study, the CTS2 was used in reference to up to three potential male and/or female main partners to measure lifetime and 6 month prevalence of violent experiences. A positive

response across partners on any of the sexual coercion, physical assault, injury, or psychological aggression subscales was coded as “presence of partner violence.”

Mental health—Mental health was measured with two standardized scales: the Posttraumatic Stress Diagnostic Scale (PDS; Foa 1995) and the Brief Symptom Inventory (BSI; Derogatis 1993). The PDS, a measure with good diagnostic agreement with the Structured Clinical Interview for DSM-III-R (SCID, Williams et al. 1992; Foa 1995), is a 49-item scale used to assess the DSM-IV diagnostic criteria (American Psychiatric Association 1994) for posttraumatic stress disorder (PTSD) and to assess the severity of posttraumatic symptoms. Scoring of the PDS allows for dichotomous coding of PTSD diagnosis according to DSM-IV diagnostic criteria. The BSI (Derogatis 1993) is a 53-item self-reported instrument which addresses overall psychological distress and includes subscales measuring the following domains: somatization; obsessive–compulsive behavior; interpersonal sensitivity; depression; anxiety; hostility; phobic anxiety; paranoid ideation; and psychoticism. Test–retest reliabilities for the subscales range from0.68 to 0.91 and internal consistency estimates range from0.71 to 0.85 (Derogatis 1993). Reliability analysis for the global severity index with this sample yielded an alpha of 0.97, indicating excellent internal consistency. This study relied on the global severity index, which includes all 53 items of the instrument, to assesses overall psychological distress. The global severity index was used as a dichotomous variable in this study (0 = below psychiatric outpatient median, 1 = psychiatric outpatient median and higher).

Drug and alcohol use—Drug and alcohol use was measured by the study-designed Drug Use and Risk Behavior Questionnaire (El-Bassel et al. 1998) which uses an eight-point Likert scale (0 = never, 1 = once/month or less, 2 = 2–3 days/month, 3 = once/week, 4 = 2–3 days/week, 5 = 4–6 days/week, 6 = once/day, 7 = two or more times/day) to assess drug and alcohol use in the past 6 months. In this study, positive responses to the discrete questions regarding injection of heroin, cocaine, or speedball (heroin and cocaine); the smoking of crack or marijuana; the consumption of four or more alcoholic drinks in one 6 hour period; and the use of non-prescription tranquilizers, barbiturates, or hypnotics was coded dichotomously as “use.” Negative responses to any of these items were coded as “no drug use.”

Social support—The Multidimensional Scale of Perceived Social Support (MSPSS), a 12-item instrument with internal consistency alphas ranging from 0.90 to 0.95 for each of its scales, was used to measure social support (Zimet et al. 1988). This instrument measures perceived overall social support and social support from family, friends and significant other. Reliability analyses with this sample indicated good internal consistency as reflected in the findings that follow: overall social support (12 items), alpha=0.88; social support from family (four items), alpha=0.91; social support from friends (four items), alpha=0.90; and social support from significant other (four items), alpha=0.83. The mean of each of these scales was dichotomously coded in this study, such that a response of agree or strongly agree was coded as “support” in that domain, while responses in the neutral, disagree, and strongly disagree categories were coded as “lack of support.”

Financial independence—In response to a single question regarding partners' average contribution to household and living expenses in the past 6 months across three potential partners, receiving no or almost no contribution for such expenses from any partner was coded as "financial independence." Receipt of any contribution to household expenses from any partner was coded as "financial dependence."

Analysis

Data analysis consisted of three steps. First, to minimize possible bias related to missing data (Rubin 1987; Schafer 2000), multiple imputation was conducted using AMELIA Version 2.1. Missing values of dichotomous variables were imputed according to the discrete model with the exception of the drug use, financial independence, and BSI variables, which were imputed based on rounding the normal model due to software constraints. While there are mixed opinions regarding the potential bias introduced with rounding the normal model with dichotomous variables (Ake 2005; Horton et al. 2003; King 2005; Von Hippel 2005), even those whose research cautions against this method of estimation indicate that the proportion of missing data plays a pivotal role in the risk of potential bias (Ake 2005; Horton et al. 2003). Given the low proportion (less than 2% of cases) of missing data among the dichotomous variables imputed in this way, it is expected that there would be negligible potential bias. Second, univariate analyses were conducted to identify sociodemographic characteristics of the participants and the prevalence of childhood sexual abuse, intimate partner violence, mental health problems, substance use, and social support. Third, bivariate and multivariate logistic regression analyses were conducted to examine the relationships between childhood sexual abuse and intimate partner violence. S-Plus Version 6.1 and SPSS Version 10.0 were used to conduct univariate, bivariate and multivariate analyses.

Findings

Sociodemographic Characteristics

As displayed in Table 1, the mean age of the participants was 39.9 years (SD=6.7). The majority of the women were Latina/Hispanic (47.8%) or Black/African-American(30.8%). The mean annual income was $10,143.17 (SD= 9,571.01) and the mean years of education completed was11.0 (SD=2.5). Most of the women were single, never married (46.6%) or divorced/separated (22.4%); however, less than one-third (32.0%) of the participants were financially independent from a partner. Most of the women had one intimate partner (78.8%) and had all male partners (91.1%), although 6.3% of women had all female partners and 2.6% had male and female partners. More than half of the participants reported a lifetime history of homelessness (52.9%); 44% reported a lifetime history of incarceration.

Childhood Sexual Abuse and Intimate Partner Violence

As displayed in Table 2, more than half of the participants reported a history of childhood sexual abuse (57.9%). While such prevalence exceeds prior estimates ranging from 15–45% among probability and non-probability samples among general populations (Russell 1983; Finkelhor et al. 1990; Wyatt 1992; Finkelhor and Dziuba-Leatherman 1994; Briere, Smiljanich and Henschel 1994; Wonderlich et al. 1996), it is somewhat lower than prior

estimates among women in substance use treatment, among whom rates have been as high as 75% (Rohsenow et al. 1988; Miller et al. 1993).

Lifetime history of intimate partner violence, with up to three main partners, was reported by 89.7% of the participants; 6-month prevalence of such violence was 78.4%. The prevalence of lifetime history of partner violence among the participants is three to four times the prevalence identified in national surveys with general populations (Browne 1993), and somewhat higher than prior estimates among women in substance use treatment (American Medical Association 1992; Bennett and Lawson 1994; Gilbert et al. 1997; El-Bassel et al. 2000; Gilbert et al. 2000).

Social Support

Although nearly ninety percent of the women reported experiencing intimate partner violence in the past 6 months, most women (82.2%) reported social support from their partners, followed by family (60.6%), and friends (44.0%).

Mental Health

More than one-quarter of the participants (28.6%) met the DSM-IV diagnostic criteria for posttraumatic stress disorder (American Psychiatric Association 1994). This rate is approximately 2.5 times the prevalence identified in the National Comorbidity Survey (Kessler et al. 1995); however, it is comparable to the 25.5% PTSD prevalence rate found among women in methadone treatment in a study by Hien et al. (2000). Nearly one-fifth (19.5%) of the participants experienced psychological distress which exceeded the outpatient psychiatric median score (Derogatis 1993).

Substance Use

In the past 6 months, the most commonly used drug was marijuana, reported by 25.0% of the participants, followed by crack (23.8%), four or more drinks in a 6 hour period(19.7%), injected heroin (19.5%), nonprescription tranquilizers, barbiturates or hypnotics (17.8%), injected cocaine(11.5%), and injected speedball (8.2%).

Direct Relationship between Childhood Sexual Abuse and Intimate Partner Violence (Hypothesis 1)

As displayed in Table 3, unadjusted logistic regression analyses indicated that in comparison to their counterparts, women who reported a history of childhood sexual abuse were 2.5 times as likely to report a lifetime history of intimate partner violence (OR=2.48, CI=1.29, 4.77, p=0.007) and more than 1.5 times as likely to report experiencing intimate partner violence in the past 6 months (OR=1.64, CI=1.02, 2.64, p=0.04).

After adjusting for sociodemographic characteristics, women with a reported history of childhood sexual abuse were three times as likely to report experiencing a lifetime history of intimate partner violence (OR=3.01, 95% CI=1.50, 6.03, p=0.002); however, when adjustments for sociodemographic characteristics and other confounding covariates were made in the model predicting intimate partner violence in the past 6 months, childhood sexual abuse was no longer a statistically significant predictor (OR=1.39, 95% CI=0.81,

2.38, p=0.231). Thus, these findings provide partial support for Hypothesis 1 that there would be a statistically significant direct relationship between childhood sexual abuse and intimate partner violence in one's lifetime, but not in the past 6 months, when adjusting for potential confounders.

Mediated Relationship between Childhood Sexual Abuse and Intimate Partner Violence (Hypothesis 2)

The change in the statistical significance of the relationship between childhood sexual abuse and intimate partner violence in the last 6 months in the bivariate and multivariate models suggests that the relationship may be mediated by other statistically significant predictors in the model (Baron and Kenny 1986), which include financial independence (OR=0.33, 95% CI=0.19, 0.58, p<0.001), PTSD (OR=2.65, 95% CI=1.24, 5.66, p=0.01), psychological distress (OR=2.43, 95% CI=1.02, 5.78, p<0.05), and one of the control variables, being widowed in comparison to the single, never married reference group (OR=0.44, 95% CI=0.19, 1.01, p=0.05). PTSD and psychological distress meet the three criteria for mediation proposed by Baron and Kenny (1986): childhood sexual abuse is significantly associated with both PTSD (OR=1.95, 95% CI=1.19, 3.20, p<0.01) and psychological distress (OR=3.26, 95% CI=1.82, 5.83, p<0.001) at the bivariate level; childhood sexual abuse is significantly associated with intimate partner violence in the last 6 months at the bivariate level (OR=1.64, 95% CI=1.02,2.64, p<0.05); and PTSD and psychological distress are significantly associated with intimate partner violence in the multivariate model, as shown in Table 3. Further, inclusion of these two variables in subsequent models resulted in the elimination of a statistically significant relationship between childhood sexual abuse and intimate partner violence, which suggests that perfect mediation is present (Baron and Kenny 1986). Although significantly associated with intimate partner violence, financial independence and marital status did not meet the criteria for mediation as a result of the first step in testing for mediation: childhood sexual abuse was not significantly associated with financial independence (OR=0.95, 95% CI=0.62, 1.45, p=0.81) or marital status at the bivariate level. Further, the removal and reinsertion of each of these variables did not alter the statistical significance of the relationship between childhood sexual abuse and intimate partner violence in the multivariate model.

Thus, these findings provide partial support for Hypothesis 2 that there would be a mediated relationship between childhood sexual abuse and intimate partner violence in the past 6 months; the relationship was mediated by mental health factors. Substance use, social support, and financial independence did not mediate this relationship, although financial independence was significantly associated with decreased risk of intimate partner violence.

Discussion

In this examination of the relationships between childhood sexual abuse and intimate partner violence there was partial support for both of the hypotheses. There was a statistically significant direct relationship between childhood sexual abuse and intimate partner violence in one's lifetime when controlling for potential confounders, although the confounders in the analysis were limited to sociodemographic characteristics due to concerns regarding

temporality with other potential confounders such as substance use, mental health factors, social support, and financial independence. When controlling for these additional covariates in the examination of the relationship between childhood sexual abuse and intimate partner violence in the past 6 months, there was no longer a statistically significant direct relationship between childhood sexual abuse and intimate partner violence. Rather, the relationship between childhood sexual abuse and intimate partner violence was mediated by PTSD and psychological distress. Women experiencing PTSD or psychological distress were approximately 2.5 times more likely to experience intimate partner violence than women without such experiences. Although not a mediator in this relationship, financial independence reduced women's risk of partner violence by two-thirds. These findings suggest that a history of childhood sexual abuse increases the risk of PTSD and psychological distress, which in turn, increase the risk of intimate partner violence, as does financial dependence on one's partner.

This study extends earlier research on increased risk of intimate partner violence among women in substance use treatment who report childhood sexual abuse (El-Bassel et al. 2000; Gilbert et al. 1997; Gilbert et al. 2000) and is the first to our knowledge that begins to elucidate the mechanisms of risk between childhood sexual abuse history and exposure to intimate partner violence in adulthood among a random sample of women in methadone treatment. While the link between childhood sexual abuse and mental health problems has been well-documented (Boney-McCoy and Finkelhor 1996; Briere and Elliott 2003; Fergusson et al. 1996; Merrill et al. 2001; Molnar et al. 2001; Mullen et al. 1996; Wilsnack et al. 1997; Wind and Silvern 1992), the link between these resultant mental health problems and intimate partner violence risk is less clear. The limited research on this link may reflect the potential of such investigation to blame the victim for another's abusive behavior; however, such investigation may elucidate key points of intervention to empower women at risk and to inform the services they access (Krause et al. 2006). Relevant hypotheses regarding the link between mental health problems and victimization include the possibility that mental health problems make women "easier prey" for people who engage in violence (Briere and Jordan 2004; Krause et al. 2006); that substance use to manage psychological distress may limit women's ability to detect and address victimization (Briere and Jordan 2004; Orcutt et al. 2002); and that posttraumatic stress symptoms may negatively influence key processes in danger avoidance, such as information processing, risk identification, and connections between emotional arousal and actions to protect one's self (Krause et al. 2006; Orcutt et al. 2002). However, in order to guide appropriate intervention strategies, there remains a need for further examination of the causal pathways between mental health problems and risk of intimate partner violence.

Two theoretical frameworks, social learning theory (Bandura 1977; Bandura et al. 1977) and the cognitive theory of stress and coping (Lazarus and Folkman 1984), may help explicate possible ways in which mental health problems associated with childhood sexual abuse increase the risk of exposure to intimate partner violence and may provide guidance for intervention strategies to assist women at risk. Both theories draw heavily upon cognitive processes to understand behavioral change. Social learning theory provides understanding regarding the ways in which a woman's appraisal of her own capacity to effect change, her sense of perceived self-efficacy, will influence her taking action to address violence in her

relationship. The stress and coping paradigm augments this attention to a woman's appraisal of her ability to take action with additional consideration of resources and situational factors that may influence this appraisal. Additionally, building upon cognitive processes related to individual and situational factors that influence a woman's appraisal of her potential for successful action, the stress and coping paradigm includes attention to the coping strategies that women use based on such appraisal. The linkages between cognitive appraisal and coping strategies are particularly salient in efforts to formulate interventions to assist women with addressing violence in their relationships.

Social Learning Theory

A central component of social learning theory holds that perceived self-efficacy is a powerful predictor of whether or not a person engages in behavioral change (Bandura 1977; Bandura et al. 1977), such as taking steps to address abuse in an intimate relationship. Perceived self-efficacy is influenced by performance accomplishments (e.g., successful accomplishments contribute to a sense that one is able to succeed), vicarious experience (e.g., observing others overcome challenges and succeed in their actions provides a model that such action is possible), verbal persuasion (e.g., hearing from others that action may be possible can influence one's perceived sense of efficacy to take action), emotional arousal (e.g., feeling intense anxiety and physiological arousal contributes to impaired performance and decreased sense of efficacy), and situational experiences (e.g., certain circumstances require greater action and their consequences involve greater risk; Bandura 1977; Bandura et al. 1977). Problematic substance use that typically prompts engagement in methadone treatment may contribute to limited performance accomplishments (Rao et al. 2000) and limited exposure to positive vicarious learning opportunities, which may result in limitations in self-efficacy among this population of women (Bandura 1977). In the presence of posttraumatic stress and global psychological distress, which are reinforced by the ongoing threat of violence from their partners (Schiff et al. 2002), women are likely to experience a high degree of emotional arousal which will impair their performance efforts to address partner violence and will further limit their sense of self-efficacy. In a cyclical fashion, it is probable that intense emotional arousal, in conjunction with limited performance accomplishments and high-risk situations, will constrain a woman's perceived ability to address the violence she is experiencing. Further, subsequent analyses of the data indicate that women experiencing PTSD or psychological distress were less than half as likely to have social support from their families and less likely to have overall social support, which suggests that women experiencing mental health problems may have more limited exposure to opportunities for vicarious experience, verbal persuasion, and management of emotional arousal that would positively influence their sense of perceived self-efficacy.

Within this theoretical framework, interventions which target co-occurring mental health problems, to reduce emotional arousal, and which enhance social support, to support opportunities for vicarious experience and verbal persuasion, may be particularly relevant in reducing the risk of intimate partner violence among women in methadone treatment. Bearing in mind the power of successful outcomes to enhance one's sense of self-efficacy, it is important for service providers to work together with clients to set attainable goals that can yield successes for them. Because performance accomplishments are the most powerful

contributors to one's sense of self-efficacy (Bandura 1977), it is essential that service providers strive to set clients up for success, as successful accomplishment of incremental goals may provide a pathway to assist women with addressing violence or exiting the relationship.

Stress and Coping

According to Lazarus and Folkman (1984), people will use one of two types of coping strategies to respond to stressors: emotion- or problem-focused coping, depending upon their cognitive appraisal of the stressful situation. When changing the situation is appraised to be beyond the person's control, she will be more likely to use emotion-focused coping, which involves efforts to reduce distress by avoiding, minimizing, selectively attending, and drawing out positive aspects of negative situations. When a person appraises that the situation can be changed, she will be more likely to use problem-focused coping, which involves a range of problem solving strategies, such as identifying the problem, possible solutions, and costs and benefits of possible solutions; selecting a solution; and taking action. In addition to the appraisals a person makes regarding the amenability of the situation to change, coping is also influenced by the availability of coping resources, such as health and energy, positive beliefs, problem-solving skills, social skills and support, and material resources, and by potential constraints on one's coping, such as personal constraints related to psychological impairment and culturally-informed beliefs and values; environmental constraints related to responsiveness of institutions and social circumstances; and the level of threat associated with the stressor.

While it is possible that emotion-focused coping in the face of ongoing intimate partner violence may allow a woman to de-escalate a violent situation and to reduce her psychological distress, it may continue to keep her trapped in a violent relationship. Problem-focused coping, which would facilitate a woman's efforts to address the violence she is experiencing, is likely to be inhibited by mental health problems. Women who are experiencing PTSD and psychological distress secondary to childhood sexual abuse are likely to have limited energy and limited positive beliefs about themselves and their potential to effect change in their relationships, which are important ingredients of problem-focused coping (Lazarus and Folkman 1984). Additionally, a significant number of women in methadone treatment continue to use substances, which may be an attempt to manage the profound psychological distress associated with childhood sexual abuse and other traumatic experiences (Chilcoat and Breslau 1998a, b; Hien et al. 2005; Yegidis 1992). Ongoing psychological distress and substance use may make women particularly reliant upon intimate partners for drugs (Amaro and Hardy-Fanta 1995), adding to their constrained sense of options and contributing to emotion-focused coping and avoidance of action to address violence in their relationships.

In the context of ongoing physical, sexual, and psychological violence, appraisal of potential threat of retaliation by her partner further compounds the likelihood of emotion-focused coping. The level of threat as a constraint on coping is an important consideration as greater threats elicit more emotion-focused coping and can inhibit problem-focused coping by impairing information processing and cognitive functioning (Lazarus and Folkman 1984).

Women whose experiences with childhood sexual abuse have impacted their mental health may be particularly vulnerable to the ongoing threat of violence by their partners and its impact on their coping strategies.

Interventions to address mental health problems and the limited social support associated with them are supported and augmented through an interpretation of the findings according to the stress and coping theoretical framework (Lazarus and Folkman 1984). Given that mental health contributes to positive beliefs about one's self and provides energy to address problems, strategies that strengthen women's mental health would likely support greater problem-focused coping and action to address violence in their relationships. Additionally, the limited social support among women who are experiencing PTSD and psychological distress suggests that they are also less likely to have social support resources to strengthen their coping efforts. Here again, there is likely to be a cyclical process through which violence exacerbates mental health problems and conveys a threat of further violence, constraining a woman's appraisal of her ability to effect change and limiting her ability to use problem-focused coping to address the situation. Interventions that help women reduce mental health problems, strengthen their social support systems, and maximize their sense of control (Schiff et al. 2002), may foster problem-focused coping and may interrupt this cyclical process.

Given the role that resources play in one's appraisal of options and coping strategies (Lazarus and Folkman 1984), financial dependence upon a partner may also play an important role in this cyclical process as it further limits a woman's appraisal of her situation and the coping strategies she employs to manage it. Although financial independence was not a mediator in the relationship between childhood sexual abuse and intimate partner violence, as was hypothesized, it remained a statistically significant predictor of decreased intimate partner violence among participants in this study. This finding underscores the importance of not only focusing on psychological considerations to assist women with addressing violence they experience, but also focusing on the very real economic constraints that likely contribute to women's limited alternatives to their violent relationships. Based on their findings that extreme poverty was associated with increased risk of intimate partner violence among women in methadone treatment, Moreno et al. (2002) suggest that assessment of poverty should be a standard component of assessments in substance use treatment and that poverty may be an important marker for additional assessment of the risk of intimate partner violence. In addition to such assessment, it is critical that case management and other supportive services are provided to assist women in methadone treatment with meeting their basic needs as an important avenue away from partner violence.

Limitations and Implications for Future Research

Implications of this study should be considered in light of its limitations. First, this study is based upon cross-sectional data that limit the ability to draw inferences regarding the temporal and causal relationships between mental health problems, financial independence, and intimate partner violence exposure. Additionally, as found in this research, relationships between covariates, such as the relationship between PTSD and reduced social support, may limit our ability to fully understand the complex connections between childhood sexual

abuse, mental health, substance use, social support and intimate partner violence risk. Future research in this area would be strengthened with longitudinal data to strengthen causal inferences and with statistical methods such as structural equation modeling (Woods 2005) which can explicitly test direct and mediated pathways while adjusting for associations between covariates. Second, the data reported in this study were based on self-reports, and the main predictor variable, childhood sexual abuse history, was based on retrospective self-report. Given that factors which affect memory tend to reduce recollection and disclosure, and that events which occur at sufficient age and are known to the person are likely to be correctly recalled, it is likely that affirmation of the event can be given greater weight than denial of the event (Brewin et al. 1993). In conjunction with the sensitive nature of childhood sexual abuse, the possible avoidance of discussion of a traumatic event, and the potential for impaired memory of traumatic events, these factors suggest that recall bias likely resulted in a conservative estimate of childhood sexual abuse prevalence in this study. Third, the measurement of childhood sexual abuse and intimate partner violence may have contributed to the differences between their estimated prevalence in this study and previous research. This study employed a conservative definition of childhood sexual abuse and an inclusive definition of intimate partner violence, which may have resulted in a lower estimate of childhood sexual abuse and a higher estimate of intimate partner violence in comparison to previous findings among women in substance use treatment. Fourth, this study did not examine intimate partner characteristics, such as their status as primary or secondary partners, their gender, or other aspects of their sociodemographic backgrounds, which may influence patterns of violence in their relationships. Lastly, the lack of available data to compare the full randomly-selected sample of women enrolled in methadone treatment (n=753) with those who became participants in the study (n=416) prevented the examination of potential selection bias.

Our discussion drew upon social learning and stress and coping theories to explicate possible pathways through which mental health might mediate, and financial independence might influence, the relationship between childhood sexual abuse and intimate partner violence. Future research in this area would be strengthened with explicit testing of the relationships between the identified mediators, PTSD and psychological distress, as well as financial independence, and key constructs of these theories, such as self-efficacy and emotion- and problem-focused coping. Additionally, examination of the relationships between the key constructs of these theories and risk of intimate partner violence would further elucidate the pathways of risk for intimate partner violence and critical points of intervention to reduce such risk.

Conclusion

Findings of this study highlight the particular vulnerability of women in methadone treatment: more than half of the women reported a history of childhood sexual abuse; more than three-quarters experienced partner violence in the last 6 months; more than one-quarter met the diagnostic criteria for PTSD; and most had limited education, income, and financial independence from their partners. Further, our findings indicate that the relationship between childhood sexual abuse and intimate partner violence is mediated by mental health problems among women in methadone treatment, and that financial dependence on a partner increases

one's risk of exposure to intimate partner violence. Taken together, these findings underscore the critical importance of providing comprehensive interventions with women in methadone treatment settings, including integrated mental health services and referrals for specialized services (Schiff et al. 2002), such as safe shelter, legal advocacy to obtain orders of protection, and resources for meeting basic needs in order to assist women with achieving physical, psychological, and social safety. Such multifaceted strategies, which are consistent with calls from several researchers for "multidimensional" (Krause et al. 2006) and "multimodal"(Briere and Jordan 2004) interventions, may strengthen women's self-efficacy, broaden their options, enhance their sense of personal power, influence their situational appraisals, and facilitate problem-focused coping as avenues away from violence.

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Table 1

Sociodemographic characteristics of participants (*N*=416)

	M	(SD)	*n*	%
Age in years	39.9	6.7		
Average annual income—past year (US$)	10,143.17	9,571.01		
Number of years of education completed	11.0	2.5		
Race/ethnicity				
African American/Black			128	30.8
Latina/Hispanic			199	47.8
White/Other			89	21.4
Legal marital status				
Single, never married			194	46.6
Divorced or separated			93	22.4
Widowed			47	11.3
Married			82	19.7
More than 1 intimate partner			88	21.2
Gender of partner(s)				
All male			379	91.1
All female			26	6.3
Male and female			11	2.6
Financial independence from partner			133	32.0
Lifetime history of incarceration			183	44.0
Lifetime history of homelessness			220	52.9
HIV-positive status			91	21.9

Table 2

Childhood sexual abuse, intimate partner violence, mental health, substance use and social support among participants (*N*=416)

	n	%
Childhood sexual abuse history	241	57.9
Intimate partner violence		
Intimate partner violence in lifetime	373	89.7
Intimate partner violence in past 6 months	326	78.4
Mental health		
PTSD diagnosis	119	28.6
Psychological distress	81	19.5
Substance use—past 6 months		
Injected heroin	81	19.5
Injected cocaine	48	11.5
Smoked crack	99	23.8
Injected speedball (heroin and cocaine)	34	8.2
Smoked marijuana	104	25.0
Consumed 4 or more alcoholic drinks in a 6 hour period	82	19.7
Used Valium, Ativan, Librium, Seconal or other non-prescription tranquilizers, barbiturates or hypnotics	74	17.8
Social support		
Overall	250	60.1
Family	252	60.6
Significant other	342	82.2
Friend	183	44.0

Table 3

Unadjusted and adjusted odds ratios for the effect of childhood sexual abuse on intimate partner violence (IPV) in one's lifetime and in the past 6 months (*N*=416)

	Lifetime IPV OR (95% CI)	Past 6 months IPV OR (95% CI)
Unadjusted models		
Childhood sexual abuse	2.48 (1.29, 4.77)**	1.64 (1.02, 2.64)*
Adjusted models		
Childhood sexual abuse	3.01 (1.50, 6.03)**	1.39 (0.81, 2.38)
Age	0.97 (0.92, 1.03)	0.97 (0.93, 1.02)
Race/ethnicity		
White/Other (reference)	–	–
Black/African American	1.68 (0.60, 4.66)	2.06 (0.94, 4.51)
Latina/Hispanic	0.90 (0.37, 2.22)	0.90 (0.45, 1.82)
Legal marital status		
Single, never married (reference)	–	–
Divorced or separated	0.67 (0.29, 1.55)	0.76 (0.38, 1.52)
Widowed	0.54 (0.19, 1.53)	0.44 (0.19, 1.01)*
Married	1.10 (0.40, 3.01)	0.62 (0.30, 1.29)
Education	1.06 (0.93, 1.22)	1.06 (0.95, 1.18)
Log of average annual income—past year	1.77 (1.11, 2.83)*	1.14 (0.79, 1.65)
More than 1 main partner		1.34 (0.66, 2.72)
Financial independence		0.33 (0.19, 0.58)***
Posttraumatic stress disorder		2.65 (1.24, 5.66)**
Overall psychological distress		2.43 (1.02, 5.78)*
Inject heroin		1.61 (0.57, 4.56)
Inject cocaine		1.51 (0.33, 7.00)
Smoke crack		1.15 (0.59, 2.25)
Inject speedball (heroin and cocaine)		0.24 (0.05, 1.29)
Smoke marijuana		1.21 (0.62, 2.39)
Consume 4 or more alcoholic drinks in a 6 hour period		0.75 (0.37, 1.49)

	Lifetime IPV OR (95% CI)	Past 6 months IPV OR (95% CI)
Use Valium, Ativan, Librium, Seconal, or other non-prescription tranquilizers, barbiturates, or hypnotics		1.15 (0.53, 2.51)
Social support		0.94 (0.53, 1.67)
HIV-positive status		1.23 (0.63, 2.41)

* $p \leq 0.05$

** $p \leq 0.01$

*** $p < 0.001$