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Recent Economic Intimate Partner Violence and Posttraumatic Stress Symptoms Among a Racially and Ethnically Diverse Sample of U.S. Women Experiencing Intimate Partner Violence

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Abstract
Posttraumatic stress disorder (PTSD) is a prevalent consequence of physical and sexual intimate partner violence (IPV); however, little is known about the unique contributions of economic IPV. Furthermore, women’s economic self-sufficiency may explicate the potential relationship between economic IPV and PTSD symptoms. Guided by the Stress Process Theory and Intersectionality, this study examined associations between economic IPV and women’s PTSD symptoms and assessed economic self-sufficiency as a mediator. Participants were 255 adult women experiencing IPV recruited from metropolitan Baltimore, MD, and the state of CT who participated in two different studies. Participants completed surveys on IPV, economic self-sufficiency, and PTSD. Path analyses were conducted to examine direct and indirect associations of economic IPV with economic self-sufficiency and PTSD. Economic IPV was uniquely associated with PTSD symptoms while controlling for other forms of IPV. Economic self-sufficiency significantly partially mediated the association between economic IPV and PTSD symptoms such that economic IPV was associated with PTSD symptoms through economic self-sufficiency. Economic IPV may limit women’s ability to make autonomous decisions related to finances, which could be distressing. The mental health impact of economic IPV may be particularly debilitating for women with low economic self-sufficiency as their posttraumatic stress occurs within the context of feeling unable to meet their financial goals and also having a partner control their economic resources. Fostering economic empowerment and asset building may be a strengths-based approach to reduce the PTSD symptomatology among women experiencing IPV.

Introduction
Intimate partner violence (IPV) is a national public health issue, and the mental health sequelae of IPV are well documented (Alexander et al., 2019; Coker et al., 2005; Dutton et al., 2006; Golding, 1999, p. 440; Jones et al., 2001; Overstreet et al., 2015; Sullivan & Holt, 2008; Sullivan et al., 2016). In general, more than 1 in 3 U.S. women (36.4%) experience physical, sexual, and/or psychological abuse by an intimate partner in their lifetime (Black et al., 2011; Smith et al., 2018). There are significant U.S. racial and ethnic differences in IPV prevalence such that Black, American Indian/Alaska Native, and multiracial women report the highest prevalence of IPV (Black et al., 2011). Furthermore, IPV is associated with a number of adverse mental health outcomes, and symptoms of posttraumatic stress disorder (PTSD) are some of the most prevalent (Dutton et al., 2006; Golding, 1999). PTSD symptoms often develop when a person has difficulty recovering from a terrifying event that they either witnessed or experienced (Dauphin, 2020). Symptoms are often persistent and include four clusters: (a) re-experiencing the traumatic event through flashbacks or intrusive thoughts; (b) avoidance of trauma-related events; (c) emotional numbing or mood changes; and (d) changes in arousal or reactivity such as increased irritability (American Psychiatric Association, 2013). Women reporting physical IPV are five times more likely to have symptoms of PTSD than women with no reports of physical IPV (Golding, 1999). Similarly, other studies have found that sexual and psychological IPV are also strongly associated with reporting symptoms of PTSD among survivors (Overstreet et al., 2015). Prior research also illustrates a dose–response relationship between IPV and PTSD, such that greater frequency and severity of IPV are associated with more symptoms of PTSD (Basile et al., 2004; Coker et al., 2005). For some survivors, an experience of IPV can be a traumatic event that triggers PTSD symptoms and/or exacerbates existing symptoms.

To date, there has been a substantial focus on PTSD symptoms related to physical and sexual IPV, but less is known about the relationship between economic IPV and PTSD symptoms (Fawole, 2008; Postmus et al., 2011, 2012). Research on economic IPV remains in its “infancy” and there is no consistent definition and
measurement for economic IPV (Postmus et al., 2020). Despite this challenge, economic IPV lies in the realm of “coercive control,” in which a partner uses tactics to maintain power and control, often times forcing a dependency and continual fear (Postmus et al., 2020). In this context, economic IPV can be defined as “a deliberate pattern of control in which individuals interfere with their partner’s ability to acquire, use, and maintain economic resources” (Adams et al., 2008; Postmus et al., 2012). Therefore, experiences of economic IPV could be traumatic among survivors and either trigger or exacerbate PTSD symptoms. For example, Voth Schrag et al. (2019) found that economic IPV was significantly associated with PTSD symptoms among a sample of U.S. female community college students. Economic abuse may place survivors at risk for further danger resulting in fear of physical and emotional harm (Voth Schrag et al., 2019). However, Davila et al. (2021) found that economic IPV did not significantly relate to PTSD symptoms among Latinx women experiencing IPV when controlling for other forms of IPV. More research with diverse samples is needed to address the mixed results produced by extant studies examining economic IPV and PTSD symptoms. Despite this growing body of research, few studies have examined potential mediators of the relationship between economic IPV and PTSD symptoms (Voth Schrag et al., 2019). Furthermore, even fewer empirical intersectional investigations of economic IPV among racial and ethnic minorities have been conducted (Bullock et al., 2020; Davila et al., 2021). To address these research gaps, the current study sought to examine economic self-sufficiency as a mediator between economic IPV and PTSD symptoms while controlling for other forms of IPV, while also assessing differences in economic IPV, economic self-sufficiency, and PTSD symptoms across Black and White survivors of IPV.

Economic Self-Sufficiency as a Mediator Between Economic IPV and PTSD Symptoms

Despite the burgeoning body of research demonstrating a significant relationship between economic IPV and PTSD symptoms (Voth Schrag et al., 2019), only one study has examined a potential mediator to explicate this relationship. In particular, Voth Schrag et al. (2019) found that the relationship between economic IPV and PTSD symptoms was partially mediated through economic hardship (i.e., economic problems). Their findings indicate that experiences of economic IPV contribute to economic hardships, which can trigger traumatic reactions in the form of PTSD symptoms (Voth Schrag et al., 2019).

Increased rates of economic hardship mediate the relationship between economic IPV and PTSD symptoms (Voth Schrag et al., 2019); however, prior research postulates economic self-sufficiency as another potential mediator. Economic self-sufficiency is a process of personal and economic empowerment in which women are able to accomplish financial-related goals (Gowdy & Pearlmutter, 1993). Although no study has assessed economic self-sufficiency as a mediating pathway between economic IPV and PTSD symptoms, prior research has examined independent relationships of economic self-sufficiency with economic IPV and PTSD symptoms, which offers a rationale for this mediation. In particular, recent studies demonstrate significant inverse associations between economic self-sufficiency and economic IPV (Postmus et al., 2011; Sauber & O’Brien, 2020; Warrener et al., 2013). Postmus et al. (2011) found that experiences of economic IPV were associated with decreased economic self-sufficiency among women. Experiencing economic IPV may prevent women from making autonomous decisions about their economic resources and create a situation in which women feel unable to meet their financial goals (Postmus et al., 2011). Furthermore, the relationship between economic IPV and economic self-sufficiency is potentially cyclical (Hetling et al., 2015). Economic IPV may hinder women’s economic self-sufficiency, but lower self-sufficiency may also be a barrier to leaving or staying in an abusive relationship (Hetling et al., 2015). Prior research also indicates a relationship between economic self-sufficiency and PTSD symptoms (Sauber & O’Brien, 2020). Sauber and O’Brien (2020) found that economic self-sufficiency was significantly correlated with women’s PTSD symptoms among survivors of IPV. Their findings suggest that economic self-sufficiency and women’s PTSD symptoms among survivors of IPV tend to trend in an inverse direction such that increasing economic self-sufficiency correlates with decreasing PTSD symptoms (Sauber & O’Brien, 2020).
While prior research provides some evidence of economic self-sufficiency as a mediating path between economic IPV and PTSD symptoms (Voth Schrag et al., 2019), the Stress Process Theory (Pearlin, 1989, 1999) offers a theoretical framework for understanding this potential mediation. The Stress Process Theory postulates that experiencing traumatic events, major life events, and chronic daily issues can influence psychological health through social and interpersonal factors (Pearlin, 1989, 1999). Consistent with prior research (Adams & Beeble, 2019; Lin et al., 2022) and guided by the Stress Process Theory (Pearlin, 1989, 1999), experiences of economic IPV can be conceptualized as sudden traumas or chronic stressors for survivors. Experiencing economic abuse by an intimate partner may lead to reduced finances and job instability, which could increase the risk for psychological distress such as PTSD symptoms (Davila et al., 2021; Johnson et al., 2022; Sanders, 2015; Stylianou, 2018; Voth Schrag et al., 2019). Building from prior research (Hetling et al., 2015; Sauber & O’Brien, 2020) and the Stress Process Theory (Pearlin, 1989, 1999), women with lower economic self-sufficiency may experience PTSD symptoms as a result of feeling unable to meet their economic goals and resource loss in the context of their abusive partner’s control over their financial resources. If economic self-sufficiency is a mediating factor, this evidence may provide support for economic empowerment programs to attenuate the intended impact of economic IPV on women’s PTSD symptoms.

Intersectionality

Although there are significant differences in IPV prevalence among racially and ethnically U.S. communities (Black et al., 2011), research embodying an intersectional approach to better understand the experiences of survivors across social and cultural groups is nuanced (Cardenas, 2020). Intersectionality posits that individual social identities such as race, gender, and class intersect at the micro-level and represent multiple interlocking systems of inequality and oppression such as racism, sexism, and classism (Bowleg, 2012; Collins, 2002; Crenshaw, 1990).

As a social justice-oriented theoretical framework and analytical tool, an intersectional lens offers a strong foundation to identify and discuss how systems of oppression and power may shape experiences of economic IPV, economic self-sufficiency, and PTSD symptoms among Black and White women experiencing IPV. While there are similarities in survivors’ experiences, all of these experiences are not the same (West, 2004; Wyatt, 1992). Particularly, Black women may experience more economic IPV and PTSD symptoms and lower economic self-sufficiency due to the structural inequalities related to racism and sexism. Structural racism and sexism perpetuate harmful, racialized, and gendered stereotypes of Black women (Collins, 2002; Harris-Perry, 2011), which can fuel race- and gender-based wage gaps in the United States. (Havard, 2021). While women in all racial and ethnic groups are paid less than men in the United States, a Black woman who works a full-time job is typically paid just 62 cents for every dollar paid to a non-Hispanic White man, which is also lower than a White woman working a full-time job who is typically paid 79 cents. (National Partnership for Women & Families, 2020). The race- and gender-based wage gap is one example of how multiple systems of oppression and power operate in tandem to marginalize Black women. Racial and gender discrimination also limits Black women’s employment opportunities and results in a lack of career mobility and occupational segregation (Dill & Duffy, 2022). Employment is also inextricably linked to education, and racial residential segregation is another mechanism through which structural racism maintains racial health disparities by determining people’s access to education (Williams & Collins, 2016). These inequities are driven by racism and sexism which uniquely affects Black women by creating economic vulnerabilities and disadvantages that women have to navigate. As such, the constellation of these socio-structural factors could result in lower economic self-sufficiency, greater frequency of economic IPV, and a greater severity of PTSD symptoms among Black women survivors compared to White women survivors.

Recent research has called for studies to move beyond a single-axis framework and to view economic IPV from an intersectional lens (Bullock et al., 2020). Leveraging an intersectionality perspective can inform the
Development of contextually-relevant mental health interventions, programs, and policies that center the realities of Black women experiencing IPV. Applying this framework to the current study allows a nuanced investigation of how Black women survivors of IPV experience economic IPV, economic self-sufficiency, and PTSD symptoms differently in comparison to White women experiencing IPV.

Research Goals
To date, many studies examining IPV and PTSD among women do not consider the influence of economic IPV, which limits our understanding of the health consequences associated with economic IPV. Therefore, the current study aimed to examine the associations of economic IPV on women’s PTSD symptoms. This study also assessed the mediating effects of economic self-sufficiency on the association between economic IPV and women’s PTSD symptoms. We hypothesized that recent experiences of economic IPV would be negatively associated with economic self-sufficiency (Hypothesis 1) and positively associated with PTSD symptoms among women experiencing IPV (Hypothesis 2). We hypothesized that economic self-sufficiency would be negatively associated with PTSD symptoms among women experiencing IPV (Hypothesis 3). We also hypothesized that the association between economic IPV and women’s PTSD symptoms would be partially mediated by economic self-sufficiency (Hypothesis 4). We also conducted exploratory analyses to explore differences in economic IPV, economic self-sufficiency, and PTSD symptoms between Non-Hispanic Black and Non-Hispanic White women experiencing IPV.

Method
The methods described below have been published elsewhere (Willie et al., 2019, 2020).

Participants and Recruitment
Participants come from two studies. Although the two studies had distinct goals, they shared similar eligibility criteria, and the same survey measures, which allowed the data to be combined. We combined data from these two similar studies to strengthen the statistical power of the present analysis. Combining data from two studies also increases the generalizability of the study findings to the population (i.e., IPV survivors in the United States).

The first study—Her PrEP, Her Way (HPHW; N = 218)—was a prospective cohort study designed to examine the impact of IPV on women’s pre-exposure prophylaxis [PrEP; a daily medication that prevents HIV transmission (U.S. Food and Drug Administration, 2012)] attitudes, intentions, and uptake. Women were eligible for the study based on the following criteria: (1) between the ages of 18 and 35, (2) reported at least one of the sexual risk indicators for PrEP candidacy in the past 6 months according to the 2014 CDC clinical summary guidelines (US Public Health Service, 2014) (i.e., unprotected sex with a male partner, HIV-positive sexual partner, recent STI, two or more sexual partners, transactional sex), (3) can speak English and/or Spanish, and 4) reside in Connecticut. This study also oversampled women experiencing IPV in order to gain a better understanding of how recently IPV impacted women’s sexual health. Women were considered experiencing IPV if they reported at least one physical and/or sexual abuse experience with a male partner in the past 6 months. Participants were recruited using flyers posted online on Craigslist and Facebook, and throughout the community in beauty salons and community health clinics. Data were collected between August 2017 and April 2018. All study procedures were approved by Yale University IRB. For the current analysis, only the baseline data were used from this study.

The second study—Baltimore Her PrEP, Her Way (BMore HPHW; N = 107)—was a cross-sectional study designed to assess the social and economic determinants of long-acting reversible contraception and PrEP uptake among women experiencing IPV. Women were eligible if they were (1) female aged between 18 and 35; (2) IPV-exposed (i.e., at least one physical or sexual IPV victimization experience) in the past 12 months; and (3) engaged in unprotected sex with a man in the past 12 months and (4) if they spoke English or Spanish. The sample was recruited from three women, infants, and children (WIC) nutrition distribution centers, two youth
employment/educational centers, and a local domestic violence shelter. Flyers were also posted at community venues such as grocery stores, laundromats, etc.—all in Baltimore. Data were collected at each of these sites between February 2018 and July 2019. All study procedures were approved by Johns Hopkins School of Medicine IRB.

Women from the two studies were included in this present analytic sample if they reported experiencing physical, sexual, psychological, or economic IPV in the past 6 months (HPHW) or the past year (BMore HPHW) and had no missing data for the main outcome variable: PTSD (n = 255). Of the 255 women, 37% were from the BMore HPHW study (n = 94) and 63% were from the HPHW study (n = 161). Of the 255 women, slightly more than half of women were less than the age of 25 (53.7%) and nearly two-thirds of women had completed at least high school or received their General Educational Development (GED). Most of the women self-identified themselves as non-Hispanic Black or African American (42.7%), followed by non-Hispanic White (32.4%), Hispanic (14.7%), and non-Hispanic another racial group (11.0%) which includes American Indian/Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and more than one race.

Data Collection and Procedures
In each study, women were screened for eligibility prior to study enrollment and provided information regarding the study’s objectives and procedures. Eligible women provided informed consent and were asked to complete a survey administered through Qualtrics. Participants in the HPHW study could complete the survey either in-person at the research office or online. Participants in the BMore HPHW study completed their surveys in-person at the research office. Upon finishing the survey, participants were provided with a resource brochure and were remunerated for their participation: US$25 (HPHW) or US$35 (BMore HPHW).

Measures
Economic IPV was assessed using the 12-item version of Scale of Economic Abuse (Postmus et al., 2016). Participants were asked to report the frequency of their experiences of economic IPV in the past 6 months. Example items are “Demand that you quit your job” and “Threaten you to make you leave work.” Responses were rated on a scale ranging from 1 (Never) to 5 (Quite Often). The responses were summed to create a total score. The Cronbach’s alpha was 0.95. This shortened scale has shown strong construct validity (Postmus et al., 2016).

Physical, sexual, and psychological IPV within the past 6 months (HPHW) and 12 months (BMore HPHW) was assessed using two separate scales. The 12-item physical assault subscale of the Conflict Tactics Scale-2 (CTS-2) (Straus et al., 1996) was used to assess minor and severe forms of physical IPV experiences. Responses were recoded according to Straus et al. (2003) (i.e., Never = 0; Once = 1; Twice = 2; 3–5 times = 4; 6–10 times = 8; 10–20 times = 15; >20 times = 25). Example items are “Threw something at you that could hurt” and “Twisted your arm or hair.” The responses were summed to create a total score. The Cronbach’s alpha was 0.90. The short form of the Sexual Experiences Survey (SES) (Koss et al., 2007) was used to assess sexual IPV experiences. Example items are “Has your partner kissed or touched you sexually or removed some of your clothes when you did not want to?” and “Has your partner tried to make you have sexual intercourse when you did not want to?” Participants were asked to report the frequency with options ranging from 0 to 3+. Responses were summed to create a total score. The Cronbach’s alpha was 0.88. The 14-item short form of the Psychological Maltreatment of Women Inventory (PMWI) (Tolman, 1999) was used to assess psychological IPV experiences. Responses were rated on a 5-point scale: 1 (Never) to 5 (Very frequently). One item from the short form of the PMWI overlapped with the behavioral assessment of economic IPV and thus was removed from the final score; resulting in 13 of the original 14 items being used. Responses were summed and then dichotomized to represent exposure to psychological IPV. The Cronbach’s alpha was 0.94.
**Economic self-sufficiency** was assessed using the 15-item Women’s Employment Network Economic Self-Sufficiency Survey (Gowdy & Pearlmutter, 1993). Participants were asked to indicate the frequency in which they were able to accomplish various financially related goals and tasks within the past 6 months. An example item is “My financial situation allows me to pay my own way without borrowing from family or friends.” Responses were rated on a scale ranging from 1 (No, not at all) to 5 (Yes, all of the time). The responses were summed to create a total score in which higher scores indicated higher economic self-sufficiency. The Cronbach’s alpha was 0.95. Bivariate correlations were performed between economic self-sufficiency and economic IPV to test whether these constructs were related by difference. The relationship between economic self-sufficiency and economic IPV was statistically significant but a weak association ($r = -.13, p < .05$), thus indicating two dimensionally different constructs.

**Posttraumatic stress disorder symptoms** were assessed using the 20-item PTSD Checklist for DSM-5 (PCL-5) (Weathers et al., 2013). Participants were asked to self-report their symptoms of posttraumatic stress over the past month. Example items are “being bothered by repeated, disturbing dreams of the stress experience” and “avoiding memories, thoughts, or feelings related to the stressful experience.” Responses were rated on a scale ranging from 0 (Not at all) to 4 (Extremely). Responses were summed to create a total score in which higher scores indicated more of symptoms of PTSD. The Cronbach’s $\alpha = 0.88$.

**Sociodemographic characteristics** were assessed by asking participants to report: age (in year, continuous score), race and ethnicity (i.e., non-Hispanic Black, non-Hispanic White, Hispanic, Non-Hispanic American Indian/Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and more than one race), highest level of education completed (i.e., 9th grade or less, 10th grade, 11th grade, Finished High School or GED, Some College, Finished College, Some Graduate School, and Finished Graduate School), and recruitment site (i.e., Baltimore, MD vs. state of CT).

**Data Analysis**

Descriptive statistics including frequencies, means, and standard deviations were calculated for all study variables. Variance inflation factors were assessed for multicollinearity among variables. Study variables were also assessed for normality and skewed variables were transformed or categorized (Tabachnick et al., 2007). Given the positive skewness of physical IPV, this variable was $\log_{10}$ transformed, which is consistent with prior research (Flanagan et al., 2014; Sullivan & Holt, 2008). Given the positive skewness of sexual IPV, sexual IPV was categorized into a three-level categorical variable (0 = no occurrence, 1 = one occurrence, and 2 = two or more occurrences). This transformation method for sexual IPV is consistent with prior research (Flanagan et al., 2014; Sullivan et al., 2009). Transformed scores for physical and sexual IPV were created for the path analysis, but raw scores are shown in Table 1. Psychological IPV was excluded from the final analyses because the variance inflation factor indicated strong multicollinearity (i.e., VIF greater than 10) (Craney & Surles, 2002). Descriptive analyses were conducted in SPSS 26.

**Table 1.** Means, Standard Deviations, and Correlations among IPV, Economic Self-Sufficiency, and PTSD Symptom Severity.

<table>
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<td>1. PTSD symptom severity</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>2. Economic IPV</td>
<td>.34***</td>
<td>–</td>
<td>–</td>
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<td>3. Physical IPV</td>
<td>.21***</td>
<td>.47***</td>
<td>–</td>
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<td>–</td>
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<td>4. Sexual IPV</td>
<td>.37***</td>
<td>.40***</td>
<td>.30***</td>
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<tr>
<td>5. Economic self-sufficiency</td>
<td>–.20**</td>
<td>–.15*</td>
<td>–.03</td>
<td>–.09</td>
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<tr>
<td>Mean (SD)</td>
<td>48.58 (22.45)</td>
<td>7.16 (10.30)</td>
<td>30.72 (68.56)</td>
<td>15.13 (15.73)</td>
<td>23.32 (16.81)</td>
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*Note.* IPV = intimate partner violence; PTSD = posttraumatic stress disorder; $M$ = mean; $SD$ = standard deviation; %: percentage; n: proportion.
Next, path analyses were modeled to examine whether economic IPV was directly related to women’s PTSD symptoms and indirectly related through women’s economic self-sufficiency. These analyses also included as covariates physical IPV, sexual IPV, education, recruitment site, race and ethnicity, and age. These variables were chosen based on the following criteria: (a) a statistical relationship to PTSD symptoms at the bivariate-level, or (b) considered an important correlate of women’s PTSD symptoms in research literature. Standard goodness-of-fit indices for path models were used: a CFI and TLI > 0.95, RMSEA < 0.08 (Hu & Bentler, 1999). To test the significance of the indirect effects, bootstrapping with 5000 re-samples was used. Path analyses were conducted with Mplus 8.5. Regression coefficients (B) and \( p < .05 \) were used to assess significance. We conducted complete case analyses since the number of missing cases was small amount (n = 9), and thus less likely to bias the results (Graham, 2009). Little’s MCAR test was conducted to determine whether the missing data were missing completely at random (Little, 1988).

We conducted exploratory analyses with t-tests to explore whether there were significant differences in economic IPV, economic self-sufficiency, and PTSD symptoms for Non-Hispanic Black and Non-Hispanic White women. In particular, we explored whether there were significant differences between Non-Hispanic Black and Non-Hispanic White women on economic IPV, economic self-sufficiency, and PTSD symptoms.

Also, to test that aggregating the data across the two studies was appropriate, sensitivity analyses that were stratified by each study were conducted to ensure that the direction of the relationships was consistent across studies (data not shown). Recruitment site was controlled for in all analyses. A similar approach of aggregating data or data harmonization is very common in public health research (Doiron et al., 2013), and it has been performed in IPV-related research (Alexander et al., 2019).

Results
The average score for PTSD symptom severity in this sample was 48.58 (SD = 22.45) (Table 1). PTSD symptom severity was significantly correlated with economic IPV \( (r = .34, p < .001) \), economic self-sufficiency \( (r = -.20, p < .01) \), physical IPV \( (r = .21, p < .001) \), and sexual IPV \( (r = .37, p < .001) \). Economic IPV was significantly correlated with economic self-sufficiency \( (r = -.15, p < .05) \), and all types of IPV: physical \( (r = .47, p < .001) \) and sexual \( (r = .40, p < .001) \). Physical and sexual IPV were significantly correlated \( (r = .30, p < .001) \).

Direct and Indirect Paths Linking Economic IPV and PTSD Symptoms
There were several significant paths between economic IPV on economic self-sufficiency and women’s PTSD symptoms while accounting for physical and sexual IPV, age, race and ethnicity, education, and recruitment site (Figure 1). The overall model fit was satisfactory: CFI = 0.99, TFI = 0.96, and RMSEA = 0.03. This model accounted for 25.7% of the variance in PTSD symptom severity. Missing data were considered MCAR (test statistic = 1.85, \( df = 12, p = .99 \)). Consistent with Hypothesis 1, economic IPV was negatively related to economic self-sufficiency \( (B [95\% CI] = -0.14 [−0.27, −0.01]; p = .03) \). Consistent with Hypothesis 2, economic IPV was positively related to posttraumatic stress symptoms \( (B [95\% CI] = 0.20 [0.05, 0.33]; p = .007) \). Consistent with Hypothesis 3, economic self-sufficiency was negatively related to posttraumatic stress symptoms \( (B [95\% CI] = −0.13 [−0.25, −0.01]; p = .03) \). Consistent with Hypothesis 4, economic self-sufficiency also partially mediated the relationship between economic IPV and posttraumatic stress symptoms \( (B [95\% CI] = .02 [0.00, 0.05]; p < .001) \).
Racial Differences in Economic IPV, Self-Sufficiency, and PTSD Symptoms

We conducted a series of $t$-tests to examine differences on the key variables between Non-Hispanic Black and White women. Non-Hispanic Black women, on average, reported higher scores of economic IPV ($9.38$ ($SD = 11.52$) vs. $5.29$ ($SD = 8.93$), $t = 2.67$, $p = .00$), PTSD symptoms ($50.10$ ($SD = 24.21$) vs. $44.76$ ($SD = 19.61$), $t = 1.56$, $p = .11$), and lower economic self-sufficiency ($19.26$ ($SD = 16.75$) vs. $28.5$ ($SD = 17.20$), $t = 3.53$, $p = .00$) than non-Hispanic White women.

Discussion

The goal of the current study was to examine the associations between economic IPV and women’s PTSD symptoms and to assess economic self-sufficiency as a mediating pathway. This study also explored differences in economic IPV, economic self-sufficiency, and PTSD symptoms among Non-Hispanic Black and White women. Our findings indicate that economic IPV uniquely contributes to women’s PTSD symptoms while controlling for physical and sexual IPV experiences. Second, economic self-sufficiency partially mediated the association between economic IPV and PTSD symptoms, such that economic IPV was significantly related to PTSD symptoms through economic self-sufficiency. Our exploratory analyses also found that non-Hispanic Black women tended to report a greater severity of economic IPV and lower economic self-sufficiency than non-Hispanic White women. These findings have important implications for PTSD symptoms among women survivors of IPV. In particular, economic IPV is an important traumatic event that may result in PTSD symptoms among survivors, and economic self-sufficiency could be a key mechanism to address in mental health interventions and services.

After controlling for physical and sexual IPV, our findings indicate that economic IPV uniquely influences women’s PTSD symptomatology and economic self-sufficiency partially mediates this relationship. Aligned with the Stress Process Theory (Pearlin, 1989, 1999), it is possible that women experiencing economic abuse by an intimate partner may face financial difficulties (e.g., income loss), which reduces women’s economic self-sufficiency as their ability to obtain and maintain their financial goals diminish (i.e., high debt, missed payments). In particular, economic IPV can lead to damaged credit, housing instability, and unemployment (Matjasko et al., 2013), which can also serve as tangible reminders of the traumatic experience even after the relationship has ended (Adams et al., 2008; Krigel & Benjamin, 2021). Moreover, in a qualitative study, IPV survivors described the aftermath of economic abuse as being unable to leave an abusive partner due to economic dependence and being left with substantial financial debt when survivors did leave (Sanders, 2015). Experiencing financial
obstacles while trying to obtain basic necessities for oneself and possibly children could trigger and worsen PTSD symptoms (e.g., increased arousal, irritability). Altogether, economic IPV may debilitate women’s economic self-sufficiency which could lead to the development of new or maintenance of existing PTSD symptoms.

As an analytic tool, intersectionality (Bowleg, 2012; Collins, 2002; Crenshaw, 1990) provides a socio-structural lens to assess experiences of economic self-sufficiency and economic IPV among Black women survivors of IPV. In particular, our findings revealed that Black women tended to report lower economic self-sufficiency and more experiences of economic IPV than White women in our study. Consistent with prior research (Cardenas, 2020; West, 2004), these findings are best contextualized within the existing structurally-driven economic inequities that disparately impact Black women’s wellbeing. Specifically, prior research indicates that Black women’s economic self-sufficiency is negatively influenced by socio-structural factors such as inequalities in education, employment, and wage gaps (Dickerson, 2002; DuMontier, et al., 2017). It is possible that economic self-sufficiency is lower among Black women survivors than White women survivors due to the inequalities in education, employment, and wage gaps that limit economic mobility and independence. Furthermore, the racial differences in women’s experiences of economic abuse by an intimate partner are similar to the national estimates of IPV among U.S. women. Specifically, a CDC-led study found that Black women reported higher rates of physical, sexual, and psychological IPV than White women (Black et al., 2011). Similarly, our study found that economic IPV was highest among Black women than White women. It is possible that socio-structural factors that diminish economic self-sufficiency are also contributing to racial differences in economic IPV. Particularly, systemic inequalities in education and employment can produce socioeconomic disadvantages (Bailey et al., 2017; Dill & Duffy, 2022; Williams & Collins, 2016), a risk factor for IPV (Yakubovich et al., 2018). Although our study was underpowered to test multigroup mediation modeling, it would be useful for future research to examine relationships of economic IPV, self-sufficiency, and PTSD symptoms with a larger racially diverse sample of IPV survivors. It would also be helpful for future research to include upstream factors of structural inequities such as measures of structural racism and sexism (e.g., state-level gender inequality) (Homan, 2019). While the current study leverages prior research and theoretical frameworks to postulate explanations for racial differences in economic IPV and self-sufficiency, future research that assesses upstream factors can inform the development of equity-centered policies and practices by examining how the socio-structural environment drives adverse mental health outcomes among survivors of IPV (Sharpless et al., 2022; Willie et al., 2021).

In contrast, our findings did not reveal statistically significant racial differences in PTSD symptoms among women survivors of IPV. Black women face multiple forms of trauma stemming from socio-structural factors such as racism, sexism, and classism (Crenshaw, 1990; Donovan & Williams, 2002; Mekawi et al., 2021; Seng et al., 2012; Watson et al., 2016), but prior research found that Black women survivors report fewer PTSD symptoms than their White counterparts (Lilly & Graham-Bermann, 2009; Temple et al., 2007). Research literature on socio-structural factors and empowerment may offer a potential explanation. In particular, prior studies found that Black women express more empowerment than White women (Peterson et al., 2005); and empowered Black women demonstrate more resilience and fewer PTSD symptoms than their White counterparts (Wright et al., 2010). Based on this prior research, it is possible that the lack of significant racial differences in PTSD symptoms in the current study was due in part to women’s empowerment as a potential buffer. Although the current study did not statistically assess empowerment, an intersectional analytical lens theorizes that the Strong Black Woman schema is a positive depiction of Black womanhood as strong, resilient, and capable of handling all obstacles in order to combat the harmful racist, sexist stereotypes (Collins, 2002; Harris-Lacewell, 2001). While this schema intended to be empowering, prior research indicates that this schema can also result in Black women suppressing, minimizing, and silencing their distress to represent the ideal embodiment of strength (Abrams et al., 2019; Beaubeouef-LaFontant, 2007; Watson-Singleton, 2017), especially among Black women trauma survivors (Harrington et al., 2010). Therefore, it is possible that the lack of racial differences in PTSD symptoms among our sample is due to Black women survivors endorsing the Strong
Implications for Clinical and Public Health Practice

Our findings showing a significant association between economic IPV and PTSD symptoms have potentially important implications in mental healthcare settings and practices. Particularly, the current study found that women experiencing economic abuse tended to report more PTSD symptoms. Mental healthcare settings and research need to consider using evidence-based tools that assess women’s experiences of economic abuse. Most clinical screening tools inquire about physical, psychological, and sexual IPV (Rabin et al., 2009), but few screening tools ask about economic IPV which creates a gap in care for women with these experiences. More importantly, since IPV screening is not universal (Rabin et al., 2009), clinicians might miss critical information for effective referral and treatment for women’s PTSD symptoms (Alvarez et al., 2017). As such, without reliable evidence-based screening assessments for economic IPV, survivors may not be connected to appropriate support and, as a result, suffer uncontrolled symptoms of PTSD. Modifying clinical screening tools may have a positive impact on survivors’ mental health by potentially linking survivors with community-based organizations that can assist with economic empowerment and security.

Educational settings and workplaces need to be aware of the significant associations of economic IPV and PTSD symptoms through economic self-sufficiency. Education can help women navigate into financially-secure positions and increase their access to economic resources. But alas, the consequences of economic IPV can negatively affect women’s long-term economic trajectories in part because educational and career goals are derailed (Banyard & Cross, 2008; Macmillan & Hagan, 2004). Although our study was cross-sectional data with adult women, a life course perspective suggests that experiencing IPV can impact educational attainment among young women (Klencakova et al., 2023). Educational settings need to assess IPV and offer safety plans that safeguard women and girls’ academic achievement, and hopefully prevent PTSD symptoms. Moreover, workplace policies need to be considerate of how economic abuse can impact women’s PTSD symptoms, and their work productivity. Investments in educational and training programs that are specific to women’s needs, especially young women, could be a vital step to enhancing women’s economic self-sufficiency (Adams et al., 2013).

Limitations

Our findings should be interpreted under the following study limitations. The variables analyzed were based on self-reported data. Social desirability bias may result in the under-reporting of IPV. This study also examined cross-sectional data which limits the ability to infer causality. While the current study combined samples across independent recruitment sites, the timeframe for the IPV victimization inclusion criteria for one study was past 6 months (HPHW); and the other study included women who reported victimization in the past year (BMore HPHW). The frequency of IPV in the past year might have been greater for women who reported IPV only in the past 6 months. Therefore, it is possible that the associations between IPV and other outcomes are stronger for women reporting IPV in the past 6 months than women who reported violence in the past year. Since this methodological difference is based on the location of the study, recruitment location was included as a control variable in all multivariable analyses. Another limitation to the investigation of IPV was the exclusion of psychological IPV. Our analyses found that inclusion of psychological IPV resulted in strong multicollinearity with economic IPV and, as a result, this variable was excluded from the final path analyses (Craney & Surles, 2002). Excluding psychological IPV from the multivariable analyses limits the ability to infer its implications for women’s PTSD symptoms. Although beyond the scope of the study, it is possible that both economic and psychological IPV has an important relationship to women’s PTSD symptoms. Future research should consider more
sophisticated person-oriented statistical approaches such as latent profile analyses with large samples of IPV survivors to better capture a more inclusive assessment of women’s experiences of IPV.

While the number of studies around economic IPV is increasing, psychometric data are limited because few studies have validated the scale in multiple samples for the economic IPV scale and this limits our ability to establish causality. Additional research utilizing longitudinal study designs and more psychometric data (e.g., test re-test reliability) would strengthen this body of research. Furthermore, this study was unable to formally test for effect modification between Non-Hispanic Black and Non-Hispanic White women given the sample size (i.e., multigroup SEM). However, scholars in social epidemiology have recently demonstrated that there is an overreliance in formal testing of interaction terms and recommended the use of other metrics (e.g., group-specific estimates) to show salient differences regarding racial disparities in health (Ward et al., 2019). Also, quantitative intersectionality methodologists suggest that bivariate analyses by intersectional groups can be used to discuss social inequality (Bauer & Scheim, 2019). Since one of the groups had fewer than 100 participants, which is the minimum standard for multigroup structural equation modeling (Kline, 2005), bivariate analyses were stratified by race and ethnicity. Building from this work, our exploratory findings contribute important evidence regarding group-specific estimates of this PTSD disparity among women experiencing IPV.

Women experiencing IPV were recruited from the United States, and therefore, these findings may not be generalizable to women living in other geographical locations or women without IPV experiences. The majority of women in our study did not complete college, thus, our findings may not be generalized to other populations.

Conclusions
Results from the current study strengthen our knowledge regarding the relationships between economic IPV, economic self-sufficiency, and PTSD symptoms among women experiencing IPV. Economic IPV contributes, uniquely, to women’s PTSD symptoms through economic self-sufficiency while controlling for other forms of IPV. An abusive partner controlling a survivor’s economic resources may reduce her economic self-sufficiency, leading to more symptoms of PTSD. The current study also found that Black women survivors reported more economic IPV and lower economic self-sufficiency than White women survivors. An intersectional lens posits that these racial differences are due in part to how systems of oppression and power negatively and uniquely affect Black women compared to their White counterparts. Altogether, these results suggest that the sociostructural environment in which women experiencing IPV live shapes the development and maintenance of their PTSD symptoms, and thus should be considered an important element in mental health interventions and care.

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