

Economic Hardship and Intimate Partner Violence: Exploring Economic and Social Disparities in
a Pregnant Population

Maria Isabel Carter-Cuadra

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Public Health

University of Washington

2025

Committee:

N. Jeanie Santaularia

Avanti Adhia

Program Authorized to Offer Degree:

Department of Epidemiology

© Copyright 2025

Maria Isabel Carter-Cuadra

University of Washington

Abstract

Economic Hardship and Intimate Partner Violence: Exploring Economic and Social Disparities in
a Pregnant Population

Maria Isabel Carter-Cuadra

Chair of the Supervisory Committee:

N. Jeanie Santaularia, MPH, PhD

Background: Intimate partner violence (IPV) affects over 40% of women in the U.S. and is associated with serious health risks, including depression, PTSD, substance use, and adverse birth outcomes. The health consequences of IPV are especially heightened during pregnancy, a time of increased physical, emotional, and economic vulnerability. Although prior research has established a link between economic hardship and IPV, few studies have examined multiple indicators of economic hardship in relation to IPV during pregnancy. Moreover, given documented disparities in both economic conditions and IPV prevalence across racial/ethnic groups, evaluating race/ethnicity as an effect modifier can help clarify whether these associations differ across populations. This study addresses this gap by evaluating how WIC participation, household income, and insurance type are associated with IPV before and during pregnancy, and whether these associations vary across racial and ethnic groups.

Methods: We conducted a cross-sectional analysis of 2016–2023 Pregnancy Risk Assessment Monitoring System (PRAMS) data from 38 U.S. states (N = 177,787). Economic hardship was measured using WIC eligibility and use, household income relative to the federal poverty level, and insurance type. IPV was defined as any physical violence from a current or former partner in the year before or during pregnancy. Survey-weighted logistic regression estimated adjusted

odds ratios (aORs), controlling for maternal age, race/ethnicity, education, and marital status. Stratified models assessed effect modification by race/ethnicity.

Results: IPV was reported by 2.2% of respondents (n = 3,973). Among those who experienced IPV, 82.9% lived at or below the FPL, 72.4% had public insurance, and 53.9% used WIC. Economic hardship was significantly associated with higher odds of IPV. Women with incomes at or below 100% of the federal poverty level had 5.18 times the odds of experiencing IPV compared to those with incomes above 185% of the FPL. WIC participants had 2.70 times the odds of IPV compared to women who were not eligible for the program, and those with public insurance had 2.36 times the odds compared to women with private insurance. Stratified models revealed strong associations between economic hardship and IPV across all racial and ethnic groups, with elevated odds observed when comparing individuals experiencing economic hardship to their respective higher-income, privately insured, or non-WIC-using counterparts within each group.

Conclusion: Economic hardship is strongly linked to IPV before and during pregnancy, underscoring the need for targeted prevention efforts that support low-income women.

Introduction

Intimate partner violence (IPV), defined as experiencing sexual violence, physical violence, or stalking by an intimate partner in one's lifetime, affects 41 out of 100 women in the US (Basile et al., 2022). IPV is associated with numerous health outcomes, including higher rates of diabetes, hypertension, sexually transmitted infections, substance use, and various mental health problems such as depression and post-traumatic stress disorder (Stubbs & Szoeki, 2022). These negative health outcomes are even more pronounced among pregnant individuals, who face an increased risk of pregnancy complications, premature birth, and low birth weight (Stubbs & Szoeki, 2022). A previous study using 2016–2018 Pregnancy Risk Assessment Monitoring System (PRAMS) data from six U.S. states found that approximately 6% of individuals who had recently given birth reported experiencing some form of IPV during pregnancy (D'Angelo et al., 2022). Furthermore, in 2022, homicide was the leading cause of death for pregnant individuals, with many incidents linked to IPV (Lawn & Koenen, 2022). In order to mitigate the severe consequences of IPV, it is important to understand factors that contribute to IPV. One such factor that has been associated with IPV is economic hardship (Benson et al., 2003; Economic Distress, Community Context and Intimate Violence, 2001; Frias & Angel, 2007; Lucero et al., 2016)

Economic Hardship and Intimate Partner Violence

Prior literature has identified several pathways between economic hardship and IPV among non-pregnant individuals. These studies suggest that women who experience persistent or high levels of economic hardship (i.e. employment instability, employment uncertainty, insufficiency of current income to meet needs, and perceived financial inadequacy) face significantly greater odds of experiencing IPV, even after controlling for demographic and sociodemographic factors (Benson & Fox, 2001). For example, Lucero et al. (2016) found that women reporting ongoing economic hardship had the highest likelihood of IPV, while those who never experienced

hardship had the lowest risk (Lucero et al., 2016). Additionally, both Benson et al. (2003) and Frias et al. (2007) found that reported financial strain by individuals experiencing IPV was associated with an increased likelihood of continued violence at the hands of an intimate partner (Benson et al., 2003; Frias & Angel, 2007).

However, few studies have explored the direct associations between economic hardship and IPV during pregnancy. Pregnancy is a period marked by increased physical and psychological vulnerability, which may heighten susceptibility to both economic hardship and IPV (Cochran et al., 2023; Taylor et al., 2021). Pregnant women who experience IPV are already at an elevated risk of experiencing adverse health effects such as sexually transmitted infections, depression, post-traumatic stress disorder, and various birth complications (Boy & Salihu, 2004; Chisholm et al., 2017). Prior research has found that pregnant individuals who experience economic hardship are more likely to experience IPV victimization. One study, conducted by Morgan et al., found that individuals from an Australian cohort who had been pregnant in the last 12 months and identified as economically insecure (i.e., inability to pay essential expenses on time, went without medical treatment or dental treatment when required, pawned or sold something, went without meals, or inability to heat or cool their home) were more likely to experience physical and sexual IPV than their non-pregnant counterparts (Morgan & Boxall, 2022). Another study found that reported economic hardship (i.e. food insecurity and other money problems) was associated with an increased risk of experiencing IPV during pregnancy (Cochran et al., 2023).

Reduction in economic and household stress is theorized to decrease the amount of conflict in the household that may lead to incidents of IPV (D'Inverno et al., 2018). This conflict may be exacerbated during pregnancy given that pregnancy can be a time of heightened economic stress, resulting from increased resource strain that comes with welcoming a new child to a home (Benson et al., 2003; Stanczyk, 2020). According to the Family Stress Model, financial

strain is linked to caregiver psychological distress and relationship conflict, which can contribute to IPV risk, implying that reduced financial strain may reduce the risk of IPV (Conger et al., 1994; Lucero et al., 2016). Furthermore, improved economic support may provide victim-survivors with the financial independence to leave abusive situations (Frias & Angel, 2007; Matjasko et al., 2013). Economic policies that offer financial support can provide new mothers with increased economic empowerment and financial independence that can provide them with resources to remove themselves from violent environments (D'Inverno et al., 2018; Eggers del Campo & Steinert, 2022).

Understanding specific measures of economic hardship can strengthen the evidence supporting the Family Stress Model and help identify which types of financial strain are most strongly associated with increased risk of IPV. This study focuses on three distinct measures of economic hardship as indicators of financial strain among pregnant individuals: (1) food insecurity, (2) income level, and (3) insurance type. Each measure reflects a different aspect of economic vulnerability. Food insecurity captures immediate material hardship, income level reflects broader financial resources and stability, and insurance type serves as a proxy for access to healthcare (Braveman et al., 2010; Taylor et al., 2020; Zinga et al., 2022). Examining all three measures allows for a more comprehensive understanding of how economic hardship contributes to IPV and may reveal distinct pathways through which financial strain operates.

Food insecurity, defined as limited or uncertain access to sufficient food, has been consistently linked to increased IPV risk (Carlson et al., 1999). Prior research has consistently shown that food insecurity is associated with a more than twofold increase in IPV during pregnancy (Cochran et al., 2023; Laraia et al., 2022; Melchior et al., 2009; Waterman et al., 2024). Given the established role of food insecurity in shaping IPV risk during pregnancy, participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), a nutritional

services program for low-income mothers and children, can serve as a proxy to examine food insecurity and economic vulnerability in this population (WIC Eligibility Requirements | Food and Nutrition Service, 2025).

Beyond food insecurity, income level provides a broader indicator of economic resources and stability. Several studies have noted significant differences in the prevalence of IPV across income levels (Ahmadabadi et al., 2020). For example, pregnant women who reported an income of less than \$20,000 experienced significantly higher levels of psychological abuse than those with higher incomes (Johnson, 2021). Similarly, a study using the California's Maternal and Infant Health Assessment (MIHA) found that women living below the federal poverty level, experienced significantly higher rates of maternal hardship, including IPV, compared to their higher-income counterparts (Braveman et al., 2008).

Insurance type serves as a marker of economic vulnerability and access to essential health services. Public insurance coverage, or lack of insurance altogether, often reflects underlying financial hardship and reduced access to supportive resources. Analysis of rural U.S. residents who gave birth between 2016 and 2020 found that individuals covered by Medicaid at the time of childbirth reported significantly higher rates of IPV (7.7%) compared to those with private insurance or no insurance (both 1.6%) (Kozhimannil et al., 2024). Similarly, a population-based study in California demonstrated that pregnant individuals enrolled in Medicaid were three times more likely to be hospitalized for assault-related injuries during pregnancy than their privately insured counterparts (Aizer, 2011).

Furthermore, the current body of literature on IPV has consistently shown that IPV prevalence varies across different racial/ethnic groups. Studies have found that Black, American Indian/ Alaska Native, and Latina women experience disproportionately higher rates of IPV compared

to their non-Hispanic white counterparts, even after accounting for socioeconomic factors (Basile et al., 2022; Stockman et al., 2015). In addition to disparities in IPV victimization, minority groups are also more vulnerable to economic hardship due to a long history of racial injustices across the US. Prior literature finds that minority women who are impoverished are at an increased risk of IPV than their wealthier, white counterparts (Bonomi et al., 2009; Gillum, 2019). These disparities likely exist as a result of structural racism that has historically reduced access to IPV support through increased barriers (Hulley et al., 2023).

Current Study

In this study, we draw on the Family Stress Model to examine the relationship between economic hardship and IPV before and during pregnancy (Conger et al., 1994; Lucero et al., 2016). We assess this relationship using three indicators of economic hardship: WIC eligibility and use, household income relative to the federal poverty level, and insurance type (private, public, or uninsured). While several studies have been conducted on the relationship between economic hardship and IPV, few have directly examined the relationship between multiple indicators of economic hardship, such as WIC, income, and insurance type as individual factors that may be linked to IPV, particularly before and during pregnancy. Existing research often includes these indicators as covariates in larger models rather than examining them as primary exposures of interest, thereby limiting our understanding of their distinct contributions to IPV risk (Cha & Masho, 2014; Cochran et al., 2023; Kapaya et al., 2019). Moreover, studies that examine WIC participation or insurance type in relation to IPV often focus on whether individuals were screened for IPV, rather than whether they actually experienced IPV (Cha & Masho, 2014; Halpern-Meekin et al., 2019). For aim one we will measure the association between economic hardship and IPV using unadjusted and adjusted logistic regression models. Given prior literature documenting racial and ethnic disparities in IPV prevalence, this study's second aim examines whether the relationship between economic hardship and IPV differs

The Pregnancy Risk Assessment Monitoring System (PRAMS), developed by the CDC and state health departments in 1987, is an ongoing population-based survey of individuals with a recent live birth. Conducted in 46 states and two U.S. territories, PRAMS uses birth certificate records to draw a representative annual sample of 1,000 to 3,000 respondents per state. Data are collected through mailed surveys and phone follow-ups and cover topics such as prenatal care, maternal health, stress, substance use, and infant care. PRAMS data are weighted to ensure generalizability to each state's maternal population and help address gaps in maternal and child health research. Additional details on PRAMS methodology are available from the CDC (CDC, 2025).

Study Subjects

States and territories participating in PRAMS follow a standard data collection protocol to ensure that a representative sample of the population is included in the study. Participants are identified through state birth certificate records. Once a random sample has been selected, a series of invitations to complete the survey are sent out 2-4 months after delivery, allowing mothers time to respond to questions regarding the postpartum period. Data collection combines surveys completed via mailed questionnaire, telephone interview, and telephone follow-ups for non-respondents to maximize response rates. PRAMS currently uses a minimum response rate of 50% for state release of data (CDC, 2025). Our total sample size after filtering for the given exposure and outcome variables is 177,787.

Exposures

In order to measure economic hardship, we quantified three measures of economic hardship: WIC eligibility and use, household income relative to the federal poverty line, and health insurance.

WIC eligibility and use. We used the question “During your most recent pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?” with response options being “Yes” and “No.” We created a new categorical variable using this WIC variable, household income (described below), and an additional variable that measured the number of dependents which we used as a proxy for household size. Since each fiscal year had a new federal poverty line limit, we calculated our WIC variable to reflect the timing of income eligibility. Our new variable measures WIC eligibility and use, resulting in the following three categories: (1) WIC eligible + used, (2) WIC eligible + not used, and (3) Not WIC eligible.

Household income. We used the question “During the 12 months before your new baby was born, what was your yearly total household income before taxes?” Income was originally reported as a categorical variable, with each response corresponding to a predefined income range (e.g., \$20,001–\$24,000). To facilitate comparison to year-specific federal poverty line (FPL) thresholds, each income category was assigned a midpoint value (e.g., \$22,500 for the \$20,001–\$24,000 category), allowing income to be approximated as a continuous variable. This estimated income was then divided by the FPL threshold corresponding to the mothers' reported survey year and household size (as indicated by the number of income dependents), reflecting established practices (Braveman et al., 2008). The resulting income-to-poverty ratios were used to classify women into standardized income categories relative to the FPL. We categorized income into three levels: $\leq 100\%$ FPL, 101–185% FPL, and $>185\%$ FPL. These categories align with income-based eligibility criteria for federal assistance programs such as WIC and allow for consistent classification across survey years despite the absence of exact income values. This was adjusted for each year since the FPL threshold changes on a yearly basis.

Health insurance. We used the question “During your most recent pregnancy, what kind of health insurance did you have for your prenatal care?” with response options including: “Private

health insurance from my job or the job of my husband or partner,” “private health insurance from my parents,” “private health insurance from the <State> Health Insurance Marketplace or <state website> or HealthCare.gov,” “Medicaid (required: state Medicaid name),” “state-specific option (Other government plan or program such as SCHIP/CHIP),” “state-specific option (Other government plan or program not listed above such as MCH program, indigent program or family planning program),” “state-specific option (TRICARE or other military health care),” “state-specific option (IHS or tribal),” “other health insurance,” and “I did not have any health insurance for my prenatal care.” These response options were categorized into “Private,” “Public,” or “Uninsured.” Private insurance consisted of “Private health insurance from my job or the job of my husband or partner,” “private health insurance from my parents,” “private health insurance from the <State> Health Insurance Marketplace or <state website> or HealthCare.gov.” Public insurance consisted of all other insurance types aside from “I did not have any health insurance for my prenatal care” which was categorized as uninsured.

Outcome

The outcome of interest is IPV, assessed using two PRAMS questions: (1) “During the 12 months before you got pregnant with your new baby, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?” and (2) “During your most recent pregnancy, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?” For both questions, response options included “Yes” or “No” for “My husband or partner,” “My ex-husband or ex-partner,” “Another family member,” and “Someone else.” We set response options of “Another family member,” and “Someone else” to be missing, given our focus on IPV. We combined the two questions to create a single binary outcome variable indicating whether women experienced any physical IPV in the year prior to (i.e., before) pregnancy or during pregnancy.

Confounders

Confounders in this model include variables that impact both economic hardship and IPV. All variables are self-reported and come from the PRAMS phase 8 dataset. Key confounders in this analysis include maternal age, maternal race, maternal Hispanic ethnicity, maternal education, and marital status. Maternal age has been shown throughout the literature to impact likelihood of IPV victimization, with younger women being at a higher risk for IPV (Bachman, 1994; Hairston, 2017). Maternal age also impacts economic hardship, with prior literature finding that younger mothers suffer from a loss in long-term income (Leung et al., 2016). Maternal race/ethnicity plays a role in shaping educational and economic opportunities, which can in turn affect both economic hardship and IPV exposure through structural inequities (Bhopal, 2017; Dohrmann et al., 2022; Dohrmann et al., 2022). Maternal education may act as a confounder in the relationship between economic hardship and IPV, as women with lower levels of education are more likely to experience economic hardship, and independently, lower educational attainment has been linked to higher rates of IPV, possibly due to limited access to resources, social support, or employment opportunities (Smith et al., 2019; Tankard & Iyengar, 2018; Tankard & Iyengar, 2018). Marital status influences both economic hardship and IPV risk, as married women may have greater financial stability, which can affect both their access to economic security and is associated with decreased likelihood of experiencing IPV.^{2,27} Given these relationships, adjusting for these confounders is necessary to validly estimate the association between economic hardship and IPV.

Effect Modifiers

Race/ethnicity were combined and assessed as an effect modifier. Race/ethnicity were self-reported using a multi-select format. The maternal race variable listed the following categories: non-Hispanic white, non-Hispanic Black, American Indian, Alaska Native, Asian, Hawaiian/Other Pacific Islander, Other/Multiple Race, and Unknown. Women with unknown race

were not included in the analysis. Hispanic ethnicity was assessed using a separate variable, with response options: Hispanic, non-Hispanic, and Unknown. Women with unknown ethnicity were not included in the analysis. We collapsed Asian and Pacific Islander (Asian/PI, n=15,477) and American Indian and Alaska Native (AI/AN, n=8,100) for simplicity of analysis. Our final categories were: non-Hispanic white, non-Hispanic Black, Hispanic (any race), non-Hispanic Asian/PI, non-Hispanic AI/AN, and non-Hispanic Other/Multiple.

Data analysis

Data analysis was conducted using RStudio Version 2024.12.1+563. The primary analysis used logistic regression models to examine the association between the economic hardship variables (i.e., WIC eligibility and use, income relative to the federal poverty line, and insurance type) and IPV. All analyses used survey weights.

For aim one, we used unadjusted and adjusted logistic regression models to assess the association between economic hardship (measured by WIC eligibility and use, household income relative to the federal poverty level, and insurance type) and IPV before and during pregnancy. We ran separate models for each economic hardship exposure variable: (1) WIC eligibility and use during pregnancy (WIC eligible + used, WIC eligible + not used, and not WIC eligible), (2) type of health insurance coverage during pregnancy (public only, private only, or uninsured), and (3) household income relative to the federal poverty level (categorized as $\leq 100\%$, 101–185%, and $> 185\%$). All models were adjusted for the same set of confounders: maternal age (continuous), maternal race/ethnicity (categorical), maternal education (categorical), and marital status (binary). Categorical variables were included using indicator coding, with reference groups selected based on theoretical relevance and distribution in the sample. Reference groups included “20–24” for maternal age, “non-Hispanic white” for maternal race/ethnicity, “>12 years” for maternal education, “Not WIC eligible” for WIC eligibility and use,

“Private only” for insurance type, and “>185%” for income. For aim two, we stratified by race/ethnicity (i.e. non-Hispanic white, non-Hispanic Black, Hispanic (any race), non-Hispanic Asian/PI, non-Hispanic AI/AN, and non-Hispanic Other/Multiple) for each of these three models to assess effect modification.

Results

Table 1 presents the distribution of demographic and socioeconomic characteristics stratified by IPV status. Among women who experienced IPV, nearly a third (31.8%) were aged 25–29, 35.7% were non-Hispanic white, and 27.6% were non-Hispanic Black. Regarding maternal education, nearly half (47.0%) of women who experienced IPV had more than 12 years of education compared to 35.5% with 12 years of education / high school diploma and 17.5% with less than 12 years of education. Additionally, 78.0% of women who experienced IPV were unmarried, while 22.0% were married.

Furthermore, among those who experienced IPV, the majority experienced economic hardship based on WIC eligibility and use, household income relative to the federal poverty level, and insurance type. Nearly half (53.9%) of women who experienced IPV were eligible for and used WIC, and 28.5% were eligible but did not use WIC. Only 17.6% of women who experienced IPV were not eligible for WIC. Nearly three fourths (72.4%) of those who experienced IPV had public insurance, 18.1% had private insurance, and 9.4% were uninsured. Furthermore, 82.9% of women who experienced IPV lived at or below the federal poverty level ($\leq 100\%$ FPL), while only 5.6% lived in households earning above 185% FPL.

Table 1. Demographic Variables by IPV Status

	Overall (N=177,787)	Experienced IPV (N=3,973)	Didn't Experience IPV
--	------------------------	------------------------------	--------------------------

(N=173,814)

Maternal Age

<20	2,650 (1.5%)	112 (2.9%)	2,538 (1.5%)
20–24	28,115 (16.1%)	1,105 (29.0%)	27,010 (15.8%)
25–29	51,728 (29.6%)	1,212 (31.8%)	50,516 (29.5%)
30–34	56,687 (32.4%)	892 (23.4%)	55,795 (32.6%)
35+	35,704 (20.4%)	489 (12.8%)	35,215 (20.6%)

Maternal Race/Ethnicity

Hispanic (any race)	24,816 (14.0%)	575 (14.5%)	24,241 (14.0%)
Non-Hispanic AI/AN	5,902 (3.3%)	404 (10.2%)	5,498 (3.2%)
Non-Hispanic Asian/PI	12,420 (7.0%)	98 (2.5%)	12,322 (7.1%)
Non-Hispanic Black	28,828 (16.3%)	1,095 (27.6%)	27,733 (16.0%)
Non-Hispanic Other/Multiple	9,603 (5.4%)	374 (9.4%)	9,229 (5.3%)
Non-Hispanic white	95,652 (54.0%)	1,415 (35.7%)	94,237 (54.4%)

Maternal Education

<12 years	16,838 (9.5%)	690 (17.5%)	16,148 (9.4%)
12 years / HS Diploma	39,512 (22.4%)	1,396 (35.5%)	38,116 (22.1%)
>12 years	120,065 (68.1%)	1,851 (47.0%)	118,214 (68.5%)

Marital status

Married	113,352 (63.8%)	870 (22.0%)	112,482 (64.8%)
Other	64,312 (36.2%)	3,091 (78.0%)	61,221 (35.2%)

WIC Eligibility & Use

Eligible + Not Used	31,596 (17.8%)	1,131 (28.5%)	30,465 (17.5%)
Eligible + Used	46,736 (26.3%)	2,141 (53.9%)	44,595 (25.7%)
Not Eligible	99,455 (55.9%)	701 (17.6%)	98,754 (56.8%)

Income Relative to Federal Poverty Level

>185% FPL	59,825 (33.6%)	222 (5.6%)	59,603 (34.3%)
101–185% FPL	38,663 (21.7%)	458 (11.5%)	38,205 (22.0%)
≤100% FPL	79,299 (44.6%)	3,293 (82.9%)	76,006 (43.7%)

Insurance Type

Private	97,632 (54.9%)	721 (18.1%)	96,911 (55.8%)
Public	66,805 (37.6%)	2,878 (72.4%)	63,927 (36.8%)
Uninsured	13,350 (7.5%)	374 (9.4%)	12,976 (7.5%)

* Table shows unweighted n's

Unadjusted Odds Ratios

In unadjusted models, women who were eligible but did not use WIC had 4.29 (95% CI: 3.74, 4.91) times the odds of experiencing IPV compared to those not eligible for WIC. Those who were eligible and used WIC had 5.25 (95% CI: 4.66, 5.90) times the odds of experiencing IPV compared to those who were not eligible. Women with the lowest income levels ($\leq 100\%$ FPL) had 11.23 (95% CI: 9.16, 13.77) times the odds of experiencing IPV compared to those with incomes greater than 185% of the FPL. Those with 101–185% FPL also had elevated odds of experiencing IPV (OR: 3.13, 95% CI: 2.45, 3.98) compared to women who had incomes $>185\%$ FPL. Compared to women with private insurance, those with public insurance had 5.26 times the odds of experiencing IPV (95% CI: 4.63, 5.97), while uninsured women had 3.54 times the odds (95% CI: 2.91, 4.30).

Table 2. Economic Factors Associated with IPV Prevalence

Economic Factor	Unadjusted OR [95% CI]	Adjusted OR [95% CI]
WIC Eligibility & Use		
Not Eligible	1.00	1.00
Eligible + Not Used	4.29 [3.74, 4.91]	2.57 [2.21, 2.99]
Eligible + Used	5.25 [4.66, 5.90]	2.70 [2.35, 3.11]
Income Relative to Federal Poverty Level		
$>185\%$ FPL	1.00	1.00
101–185% FPL	3.13 [2.45, 3.98]	2.21 [1.72, 2.83]
$\leq 100\%$ FPL	11.23 [9.16, 13.77]	5.18 [4.10, 6.55]
Insurance Type		
Private	1.00	1.00

Public	5.26 [4.63, 5.97]	2.36 [1.99, 2.79]
Uninsured	3.54 [2.91, 4.30]	2.09 [1.66, 2.63]

Adjusted Odds Ratios

After adjusting for sociodemographic characteristics (e.g. maternal age, race/ethnicity, education, and marital status), women who were eligible for WIC but did not use it had 2.57 times the odds of experiencing IPV (95% CI: 2.21, 2.99), while those who used WIC had 2.70 times the odds, relative to women who were not eligible for WIC. The association between income and IPV showed that women living at ≤100% of the FPL had 5.18 (95% CI: 4.10, 6.55) times the odds of experiencing IPV compared to those with incomes above 185% FPL. Those with 101–185% FPL also had significantly higher odds of IPV (aOR: 2.21, 95% CI: 1.72, 2.83) when compared to women with incomes above 185% FPL. In the adjusted model examining insurance type and IPV, those with public insurance had 2.36 (95% CI: 1.99, 2.79) times the odds of experiencing IPV and women who were uninsured had 2.09 (95% CI: 1.66, 2.63) times the odds of experiencing IPV compared to women with private insurance .

Table 3. Economic Factors Associated with IPV Prevalence Stratified by Race/Ethnicity

Economic Factor	Adjusted OR [95% CI]					
	NH-white	NH-Black	Hispanic	Asian/PI	AI/AN	Other/Multiple
WIC Eligibility & Use						
Not Eligible	1.00	1.00	1.00	1.00	1.00	1.00
Eligible + Not Used	3.23 [2.57, 4.07]	1.78 [1.33, 2.37]	1.78 [1.29, 2.44]	1.96 [0.78, 4.91]	3.78 [2.32, 6.17]	2.45 [1.41, 4.27]
Eligible + Used	3.45 [2.75, 4.33]	1.89 [1.48, 2.40]	1.60 [1.22, 2.11]	1.71 [0.7, 4.16]	4.74 [2.97, 7.56]	3.6 [2.20, 5.89]
Income Relative to Federal Poverty Level						

>185% FPL	1.00	1.00	1.00	1.00	1.00	1.00
101–185% FPL	1.89 [1.36, 2.65]	2.70 [1.62, 4.50]	1.37 [0.67, 2.82]	3.09 [1.30, 7.32]	18.55 [4.11, 83.62]	1.13 [0.44, 2.89]
≤100% FPL	5.82 [4.27, 7.92]	3.75 [2.35, 5.98]	2.32 [1.18, 4.54]	3.83 [1.59, 9.23]	66.78 [15.64, 285.16]	4.64 [1.95, 11.07]
Insurance Type						
Private	1.00	1.00	1.00	1.00	1.00	1.00
Public	2.74 [2.15, 3.51]	1.56 [1.14, 2.15]	1.67 [1.17, 2.41]	2.11 [1.18, 3.76]	1.50 [0.62, 3.65]	2.25 [1.27, 4.00]
Uninsured	2.34 [1.65, 3.33]	2.09 [1.29, 3.38]	1.34 [0.89, 2.01]	2.08 [0.69, 6.24]	2.09 [0.74, 5.93]	1.36 [0.58, 3.18]

WIC Eligibility and Use

Across all racial/ethnic groups, individuals who were eligible for WIC had higher odds of experiencing IPV compared to those who were not eligible, regardless of WIC usage. Among non-Hispanic white women, WIC-eligible participants who did not use WIC had 3.23 (95% CI: 2.57, 4.07) times the odds of experiencing IPV, while those who used WIC had slightly higher odds of experiencing IPV (aOR: 3.45; 95% CI: 2.75, 4.33) compared to those non-Hispanic white women who were not eligible for WIC. A similar pattern was observed among non-Hispanic Black participants (aOR: 1.78; 95% CI: 1.33–2.37 for WIC eligible non-users; aOR: 1.89; 95% CI: 1.48, 2.40 for WIC eligible users) and Hispanic participants (aOR: 1.78; 95% CI: 1.29, 2.44 for WIC eligible non-users; aOR: 1.60; 95% CI: 1.22, 2.11 for WIC eligible users). The strongest associations were observed among AI/AN individuals, where WIC eligible users had over four times the odds of experiencing IPV compared to non-eligible individuals (aOR: 4.74; 95% CI: 2.97, 7.56). In the Other/Multiple race category, both eligible non-users (aOR: 2.45; 95% CI: 1.41, 4.27) and eligible users (aOR: 3.60; 95% CI: 2.20, 5.89) had elevated odds of IPV compared to women who were not WIC eligible.

Income Relative to Federal Poverty Level

Lower income was consistently associated with substantially increased odds of IPV across most racial/ethnic groups. Among non-Hispanic white participants, individuals with incomes $\leq 100\%$ of the FPL had nearly six times the odds of IPV compared to those with incomes $> 185\%$ FPL (aOR: 5.82; 95% CI: 4.27, 7.92). Higher odds of IPV were also observed among non-Hispanic Black (aOR: 3.75; 95% CI: 2.35, 5.98) and American Indian/Alaska Native individuals (aOR: 66.78; 95% CI: 15.64, 285.16) with incomes at or below 100% of the federal poverty level, relative to others of the same racial/ethnic group with incomes above 185% of the FPL. Among Hispanic and Asian/PI participants, the associations were more modest but still elevated (Hispanic $\leq 100\%$ FPL: aOR: 2.32; 95% CI: 1.18, 4.54; Asian/PI $\leq 100\%$ FPL: aOR: 3.83; 95% CI: 1.59, 9.23). Among Other/Multiple race participants, those with incomes $\leq 100\%$ FPL had 4.64 times the odds of IPV (95% CI: 1.95, 11.07), while those at 101–185% FPL had slightly elevated odds (aOR: 1.13; 95% CI: 0.44, 2.89) compared to women above 185% of the FPL.

Insurance Type

Compared to individuals with private insurance, public insurance coverage was associated with increased odds of IPV across most groups. Among non-Hispanic white women, those with public insurance had nearly three times the odds of IPV compared to non-Hispanic white women with private insurance (aOR: 2.74; 95% CI: 2.15, 3.51). Similar within-group associations were observed for non-Hispanic Black (aOR: 1.56; 95% CI: 1.14, 2.15), Hispanic (aOR: 1.67; 95% CI: 1.17, 2.41), Asian/Pacific Islander (aOR: 2.11; 95% CI: 1.18, 3.76), and American Indian/Alaska Native women (aOR: 1.50; 95% CI: 0.62, 3.65). A comparable pattern was seen for uninsured individuals. Within each racial/ethnic group, women without insurance had higher odds of experiencing IPV relative to their privately insured counterparts. For example, uninsured non-Hispanic white women had more than twice the odds of IPV compared to those with private insurance (aOR: 2.34; 95% CI: 1.65, 3.33), with similarly elevated odds

among non-Hispanic Black (aOR: 2.09; 95% CI: 1.29, 3.38), Asian/PI (aOR: 2.08; 95% CI: 0.69, 6.24), and AI/AN women (aOR: 2.09; 95% CI: 0.74, 5.93).

Discussion

The aim of this study was to assess the relationship between three measures of economic hardship and IPV before and during pregnancy using PRAMS data. After adjusting for confounders, we found that income relative to FPL was the strongest predictor of IPV among pregnant women, with those beneath the FPL experiencing significantly higher odds of IPV. All other measures of economic hardship (i.e., WIC eligibility and use and insurance type) consistently resulted in more than a twofold increase in the odds of experiencing IPV, relative to their respective reference groups. Results were similar across both unstratified (all women) and stratified models by race/ethnicity.

Income may outweigh our other measures of economic hardship because of the role it plays in the other two measures. For example, WIC eligibility is dependent on an applicant's income relative to FPL (WIC Eligibility Requirements | Food and Nutrition Service, 2025). Furthermore, an individual's insurance type is also strongly dependent on their income level, with public insurance programs such as Medicaid and the Children's Health Insurance Program (CHIP) being specifically designed to provide coverage for low-income individuals (WIC Eligibility Requirements | Food and Nutrition Service, 2025). The strong association between income and IPV observed in our study reflects prior research. Analyses using the National Crime Victimization Survey (NCVS) found that women with lower household income are at increased risk for IPV (Bachman, 1994). Numerous other studies have similarly identified low income as a consistent risk factor for IPV (Ahmadabadi et al., 2020; Hairston, 2017; Matjasko et al., 2013; Norén et al., n.d.). These findings align with the Family Stress Model, which posits that economic hardship, particularly low income, can increase relationship conflict and the risk of IPV

through heightened financial stress and associated psychosocial pressures (Conger et al., 1994, Lucero et al., 2016). Given these findings, future IPV prevention efforts should target low-income communities and individuals through the increase of interventions that improve financial stability and social support.

Strong associations between economic hardship and IPV were observed across all racial and ethnic groups when comparing individuals experiencing hardship to their respective higher-income, privately insured, or non-WIC-using counterparts. While the magnitude of these associations varied by group, the consistent direction of findings suggest a robust relationship between economic hardship and IPV regardless of racial/ethnic identity. However, the variations in strength of association across different racial/ethnic groups suggest that the strength of the relationship between economic hardship and IPV may be shaped by group-specific risk and protective factors. Although risk factors such as lower income, limited education, unemployment, and substance use are common across all racial/ethnic groups (Cho, 2012; Walton-Moss et al., 2005), their impact may differ by group. In addition to risk factors, protective factors may help explain the variation observed in our findings.

One such protective factor that has been measured in the literature is social support, with studies indicating that increased social support is associated with decreased IPV victimization and increased resilience (Baumgartner, 1993; Howell et al., 2018). In fact, there is a negative relationship between victimization and social support, with victimization decreasing as women's social networks increase (Baumgartner, 1993). Various studies have found that individuals who identify as non-Hispanic Black, Asian, or Hispanic report higher levels of social support and greater satisfaction within their relationships compared to those who identify as non-Hispanic white (Sabri et al., 2018; Sabina et al., 2015; Sagrestano et al., 1999). The unique impact of risk

and protective factors on each racial/ethnic group may explain some of the variation in magnitude of association between economic hardship and IPV.

Strengths and Limitations

One primary strength of this study is that we use national-level data collected from the CDC's PRAMS. The use of PRAMS data allows for the generation of weighted estimates that are generalizable to the population of women with recent live births in participating states. Additionally, the large sample size enabled us to assess how race/ethnicity modifies the relationship between economic hardship and IPV, providing a more nuanced understanding of how economic hardship relates to IPV risk across different population subgroups. Furthermore, this study uses three measures of economic hardship, providing a more comprehensive analysis of economic hardship.

This study is also subject to limitations. First, PRAMS data are cross-sectional, which limits our ability to draw causal inferences about the relationship between economic hardship and IPV. It is likely that our exposure and outcome have a bidirectional relationship, with economic hardship impacting IPV and IPV impacting economic hardship, making it difficult to understand causality. Second, IPV is measured via self-report, which may result in underreporting due to stigma, fear of retaliation, or cultural differences in willingness to disclose abuse. This underreporting may be differential across racial and ethnic groups, potentially biasing our estimates (Espinoza et al., 2022; Holliday et al., 2020; Monterrosa, 2021; Rizo & Macy, 2011). However, this limitation is difficult to overcome as self-reporting is the most widely used measure for IPV, with it being used in nearly all scales that measure IPV (Bender, 2017). Data used in this study only included self-reported physical IPV, which excludes several other types of IPV (e.g., sexual, psychological/emotional, financial) that are also prevalent and harmful to victim-survivors. Third, the racial and ethnic composition of the sample, particularly the

overrepresentation of non-Hispanic white women, may have limited the precision of estimates for smaller subgroups, such as AI/AN women. Finally, while we adjusted for several sociodemographic variables, there may be unmeasured confounders that influence both economic hardship and IPV. For example, several studies have included measures of substance abuse, social support, and neighborhood context as additional confounders, none of which were included in this study (Economic Distress, Community Context and Intimate Violence, 2001; Benson et al., 2003; Frias & Angel, 2007).

Future Research

Future research should continue to explore the complex and intersecting relationships between economic hardship, race/ethnicity, and IPV before and during pregnancy. While this study stratified by race/ethnicity to better understand how race/ethnicity shape IPV risk, additional work is needed to unpack the underlying mechanisms driving these associations. Given that non-Hispanic white women had stronger associations between economic hardship and IPV than many of the other racial/ethnic minority groups, additional research should be conducted to assess differences in risk and protective factors among these minority groups. Qualitative research may offer valuable insights into how women from different racial and socioeconomic backgrounds experience and interpret economic strain, IPV, and access to support services during pregnancy.

Conclusions

This study provides evidence that economic hardship is a key predictor of IPV before and during pregnancy, with WIC eligibility and use, household income relative to the federal poverty level, and insurance type all strongly associated with increased IPV risk. While overall prevalence patterns align with existing literature, models that assess race/ethnicity as an effect modifier suggest that the relationship between economic hardship and IPV varies by race/ethnicity. The

strongest associations between economic hardship and IPV were observed among AI/AN women, followed by non-Hispanic white women, suggesting that other racial and ethnic minority groups may require targeted support. These findings provide evidence that support advocating for policies and practices that offer economic support and financial assistance to pregnant individuals and new mothers, which may help reduce financial-related household conflict and provide autonomy to victim-survivors in abusive relationships (Matjasko et al., 2013).

References

- Ahmadabadi, Z., Najman, J. M., Williams, G. M., & Clavarino, A. M. (2020). Income, Gender, and Forms of Intimate Partner Violence. *Journal of Interpersonal Violence*, 35(23–24), 5500–5525. <https://doi.org/10.1177/0886260517719541>
- Aizer, A. (2011). Poverty, Violence, and Health: The Impact of Domestic Violence During Pregnancy on Newborn Health. *Journal of Human Resources*, 46(3), 518–538. <https://doi.org/10.3368/jhr.46.3.518>
- Bachman, R. (1994). *Violence Against Women: A National Crime Victimization Survey Report* | Office of Justice Programs. <https://www.ojp.gov/library/publications/violence-against-women-national-crime-victimization-survey-report>
- Basile, K. C., Smith, S. G., Kresnow, M., Khatiwada, S., & Leemis, R. W. (2022). *The National Intimate Partner and Sexual Violence Survey: 2016/2017 Report on Sexual Violence*.
- Baumgartner, M. P. (1993). Violent networks: The origin and management of domestic conflict. In *Aggression and violence: Social interactionist perspectives* (pp. 209–231). American Psychological Association. <https://doi.org/10.1037/10123-009>
- Bender, A. K. (2017). Ethics, Methods, and Measures in Intimate Partner Violence Research: The Current State of the Field. *Violence Against Women*, 23(11), 1382–1413. <https://doi.org/10.1177/1077801216658977>
- Benson, M. L., & Fox, G. L. (2001). *Economic Distress, Community Context and Intimate Violence: An Application and Extension of Social Disorganization Theory, Final Report* | National Institute of Justice. <https://nij.ojp.gov/library/publications/economic-distress-community-context-and-intimate-violence-application-and-0>

- Benson, M. L., Fox, G. L., DeMaris, A., & Van Wyk, J. (2003). Neighborhood Disadvantage, Individual Economic Distress and Violence Against Women in Intimate Relationships. *Journal of Quantitative Criminology*, 19(3), 207–235.
<https://doi.org/10.1023/A:1024930208331>
- Bhopal, K. (2017). Addressing racial inequalities in higher education: Equity, inclusion and social justice. *Ethnic and Racial Studies*, 40(13), 2293–2299.
<https://doi.org/10.1080/01419870.2017.1344267>
- Bonomi, A. E., Anderson, M. L., Cannon, E. A., Slesnick, N., & Rodriguez, M. A. (2009). Intimate Partner Violence in Latina and Non-Latina Women. *American Journal of Preventive Medicine*, 36(1), 43-48.e1. <https://doi.org/10.1016/j.amepre.2008.09.027>
- Boy, A., & Salihu, H. M. (2004). Intimate partner violence and birth outcomes: A systematic review. *International Journal of Fertility and Women's Medicine*, 49(4), 159–164.
- Braveman, P., Marchi, K., Egerter, S., Kim, S., Metzler, M., Stancil, T., & Libet, M. (2008). Poverty, Near-Poverty, and Hardship Around the Time of Pregnancy. *Maternal and Child Health Journal*, 14(1), 20–35. <https://doi.org/10.1007/s10995-008-0427-0>
- Carlson, S. J., Andrews, M. S., & Bickel, G. W. (1999). Measuring Food Insecurity and Hunger in the United States: Development of a National Benchmark Measure and Prevalence Estimates. *The Journal of Nutrition*, 129(2), 510S-516S.
<https://doi.org/10.1093/jn/129.2.510S>
- CDC. (2025a, May 9). *Data Methodology*. Pregnancy Risk Assessment Monitoring System (PRAMS). <https://www.cdc.gov/prams/php/methodology/index.html>
- CDC. (2025b, May 9). *PRAMS Data*. Pregnancy Risk Assessment Monitoring System (PRAMS). <https://www.cdc.gov/prams/php/data-research/index.html>
- Cha, S., & Masho, S. W. (2014a). Discussions About Intimate Partner Violence During Prenatal Care in the United States: The Role of Race/Ethnicity and Insurance Status.

Maternal and Child Health Journal, 18(6), 1413–1422.

<https://doi.org/10.1007/s10995-013-1381-z>

Cha, S., & Masho, S. W. (2014b). Intimate Partner Violence and Utilization of Prenatal Care in the United States. *Journal of Interpersonal Violence*, 29(5), 911–927.

<https://doi.org/10.1177/0886260513505711>

Chisholm, C. A., Bullock, L., & Ferguson, J. E. (Jef). (2017). Intimate partner violence and pregnancy: Epidemiology and impact. *American Journal of Obstetrics and Gynecology*, 217(2), 141–144. <https://doi.org/10.1016/j.ajog.2017.05.042>

Cho, H. (2012). Racial Differences in the Prevalence of Intimate Partner Violence Against Women and Associated Factors. *Journal of Interpersonal Violence*, 27(2), 344–363.

<https://doi.org/10.1177/0886260511416469>

Cochran, K. A., Kashy, D. A., Bogat, G. A., Levendosky, A. A., Lonstein, J. S., Nuttall, A. K., & Muzik, M. (2023). Economic hardship predicts intimate partner violence victimization during pregnancy. *Psychology of Violence*, 13(5), 396–404.

<https://doi.org/10.1037/vio0000454>

Conger, R. D., Ge, X., Elder Jr., G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic Stress, Coercive Family Process, and Developmental Problems of Adolescents. *Child Development*, 65(2), 541–561. <https://doi.org/10.1111/j.1467-8624.1994.tb00768.x>

D'Angelo, D. V., Bombard, J. M., Lee, R. D., Kortsmid, K., Kapaya, M., & Fasula, A. (2022). Prevalence of Experiencing Physical, Emotional, and Sexual Violence by a Current Intimate Partner during Pregnancy: Population-based Estimates from the Pregnancy Risk Assessment Monitoring System. *Journal of Family Violence*, 38(1), 117–126.

<https://doi.org/10.1007/s10896-022-00356-y>

D'Inverno, A. S., Reidy, D. E., & Kearns, M. C. (2018). Preventing intimate partner violence through paid parental leave policies. *Preventive Medicine*, 114, 18–23.

<https://doi.org/10.1016/j.ypmed.2018.05.024>

Dohrmann, E., Porche, M. V., Ijadi-Maghsoodi, R., & Kataoka, S. H. (2022). Racial Disparities in the Education System: Opportunities for Justice in Schools. *Child and Adolescent Psychiatric Clinics of North America*, 31(2), 193–209.

<https://doi.org/10.1016/j.chc.2022.01.001>

Eggers del Campo, I., & Steinert, J. I. (2022). The Effect of Female Economic Empowerment Interventions on the Risk of Intimate Partner Violence: A Systematic Review and Meta-Analysis. *Trauma, Violence, & Abuse*, 23(3), 810–826.

<https://doi.org/10.1177/1524838020976088>

Eligibility Policy | Medicaid. (n.d.). Retrieved June 11, 2025, from

<https://www.medicaid.gov/medicaid/eligibility-policy>

Espinoza, L. E., Espinoza, Luis Enrique, Resendiz, Rosalva, Leal Jr., Noe, Talleff, Jennifer L., Berlanga Aguilar, Zoraya, Rouse, Rebecca, & Anangwe, K. A. (2022). Intimate partner violence incidents reporting by female minorities in the United States. *Journal of Ethnicity in Criminal Justice*, 20(3), 209–226.

<https://doi.org/10.1080/15377938.2022.2096735>

Frias, S. M., & Angel, R. J. (2007). Stability and Change in the Experience of Partner Violence Among Low-Income Women. *Social Science Quarterly*, 88(5), 1281–1306.

<https://doi.org/10.1111/j.1540-6237.2007.00503.x>

Gillum, T. L. (2019). The intersection of intimate partner violence and poverty in Black communities. *Aggression and Violent Behavior*, 46, 37–44.

<https://doi.org/10.1016/j.avb.2019.01.008>

Hairston, J. M. (2017). *Race, Age, Gender, Income, and the Experience of Adult Intimate Partner Violence* [Ph.D., Walden University].

<https://www.proquest.com/docview/1925000154/abstract/23A2943E619E4F11PQ/1>

Halpern-Meehin, S., Costanzo, M., Ehrental, D., & Rhoades, G. (2019). Intimate Partner Violence Screening in the Prenatal Period: Variation by State, Insurance, and Patient

Characteristics. *Maternal and Child Health Journal*, 23(6), 756–767.

<https://doi.org/10.1007/s10995-018-2692-x>

Holliday, C. N., Kahn, G., Thorpe, R. J., Shah, R., Hameeduddin, Z., & Decker, M. R.

(2020). Racial/Ethnic Disparities in Police Reporting for Partner Violence in the National Crime Victimization Survey and Survivor-Led Interpretation. *Journal of Racial and Ethnic Health Disparities*, 7(3), 468–480.

<https://doi.org/10.1007/s40615-019-00675-9>

Howell, K. H., Thurston, I. B., Schwartz, L. E., Jamison, L. E., & Hasselle, A. J. (2018).

Protective factors associated with resilience in women exposed to intimate partner violence. *Psychology of Violence*, 8(4), 438–447. <https://doi.org/10.1037/vio0000147>

Hulley, J., Bailey, L., Kirkman, G., Gibbs, G. R., Gomersall, T., Latif, A., & Jones, A. (2023).

Intimate Partner Violence and Barriers to Help-Seeking Among Black, Asian, Minority Ethnic and Immigrant Women: A Qualitative Metasynthesis of Global Research. *Trauma, Violence, & Abuse*, 24(2), 1001–1015.

<https://doi.org/10.1177/15248380211050590>

Johnson, L. (2021). Exploring factors associated with pregnant women's experiences of material hardship during COVID-19: A cross-sectional Qualtrics survey in the United States. *BMC Pregnancy and Childbirth*, 21(1), 755.

<https://doi.org/10.1186/s12884-021-04234-1>

Kapaya, M., Boulet, S. L., Warner, L., Harrison, L., & Fowler, D. (2019). Intimate Partner Violence Before and During Pregnancy, and Prenatal Counseling Among Women with a Recent Live Birth, United States, 2009–2015. *Journal of Women's Health*, 28(11), 1476–1486. <https://doi.org/10.1089/jwh.2018.7545>

Kozhimannil, K. B., Sheffield, E. C., Fritz, A. H., Interrante, J. D., Henning-Smith, C., &

Lewis, V. A. (2024). Health insurance coverage and experiences of intimate partner violence and postpartum abuse screening among rural US residents who gave birth

2016-2020. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association*, 40(4), 655–663.

<https://doi.org/10.1111/jrh.12843>

Laraia, B. A., Gamba, R., Saraiva, C., Dove, M. S., Marchi, K., & Braveman, P. (2022).

Severe maternal hardships are associated with food insecurity among low-income/lower-income women during pregnancy: Results from the 2012–2014 California maternal infant health assessment. *BMC Pregnancy and Childbirth*, 22(1), 138. <https://doi.org/10.1186/s12884-022-04464-x>

Lawn, R. B., & Koenen, K. C. (2022). *Homicide is a leading cause of death for pregnant women in US*. <https://doi.org/10.1136/bmj.o2499>

Leung, M. Y. M., Groes, F., & Santaaulalia-Llopis, R. (2016). The Relationship between Age at First Birth and Mother's Lifetime Earnings: Evidence from Danish Data. *PLoS ONE*, 11(1), e0146989. <https://doi.org/10.1371/journal.pone.0146989>

Lipsky, S., Caetano, Raul, Field, Craig A., & Larkin, G. L. (2006). The Role of Intimate Partner Violence, Race, and Ethnicity in Help-Seeking Behaviors. *Ethnicity & Health*, 11(1), 81–100. <https://doi.org/10.1080/13557850500391410>

Lucero, J. L., Lim, S., & Santiago, A. M. (2016). Changes in Economic Hardship and Intimate Partner Violence: A Family Stress Framework. *Journal of Family and Economic Issues*, 37(3), 395–406. <https://doi.org/10.1007/s10834-016-9488-1>

Matjasko, J. L., Niolon, P. H., & Valle, L. A. (2013). THE ROLE OF ECONOMIC FACTORS AND ECONOMIC SUPPORT IN PREVENTING AND ESCAPING FROM INTIMATE PARTNER VIOLENCE. *Journal of Policy Analysis and Management: [The Journal of the Association for Public Policy Analysis and Management]*, 32(1), 122–128.

<https://doi.org/10.1002/pam.21666>

Melchior, M., Caspi, A., Howard, L. M., Ambler, A. P., Bolton, H., Mountain, N., & Moffitt, T. E. (2009). Mental Health Context of Food Insecurity: A Representative Cohort of

Families With Young Children. *Pediatrics*, 124(4), e564–e572.

<https://doi.org/10.1542/peds.2009-0583>

Michener, J., & Brower, M. T. (2020). What's Policy Got to Do with It? Race, Gender & Economic Inequality in the United States. *Daedalus*, 149(1), 100–118.

https://doi.org/10.1162/daed_a_01776

Monterrosa, A. E. (2021). How Race and Gender Stereotypes Influence Help-Seeking for Intimate Partner Violence. *Journal of Interpersonal Violence*, 36(17–18), NP9153–NP9174. <https://doi.org/10.1177/0886260519853403>

Morgan, A., & Boxall, H. (2022). *Economic insecurity and intimate partner violence in Australia during the COVID-19 pandemic*.

Norén, L., Bergström, Martin, & Wallander, L. (n.d.). Coming to Terms with Risk Factors for Intimate Partner Violence Perpetration: A Scoping Review. *Journal of Evidence-Based Social Work*, 0(0), 1–30.

<https://doi.org/10.1080/26408066.2025.2469670>

Rizo, C. F., & Macy, R. J. (2011). Help seeking and barriers of Hispanic partner violence survivors: A systematic review of the literature. *Aggression and Violent Behavior*, 16(3), 250–264. <https://doi.org/10.1016/j.avb.2011.03.004>

Sabina, C., Cuevas, C. A., & Zadnik, E. (2015). Intimate Partner Violence among Latino Women: Rates and Cultural Correlates. *Journal of Family Violence*, 30(1), 35–47.

<https://doi.org/10.1007/s10896-014-9652-z>

Sabri, B., Simonet, M., & Campbell, J. C. (2018). Risk and protective factors of intimate partner violence among South Asian immigrant women and perceived need for services. *Cultural Diversity & Ethnic Minority Psychology*, 24(3), 442–452.

<https://doi.org/10.1037/cdp0000189>

- Sagrestano, L. M., Feldman, P., Rini, C. K., Woo, G., & Dunkel-Schetter, C. (1999). Ethnicity and Social Support During Pregnancy. *American Journal of Community Psychology*, 27(6), 869–898. <https://doi.org/10.1023/A:1022266726892>
- Smith, E., Sundstrom, B., & DeMaria, A. L. (2019). “Nobody Ever Asks Me:” A Reproductive Justice Approach to Rural Health Disparities. *Analyses of Social Issues and Public Policy*, 19(1), 78–103. <https://doi.org/10.1111/asap.12174>
- Stanczyk, A. B. (2020). The Dynamics of U.S. Household Economic Circumstances Around a Birth. *Demography*, 57(4), 1271–1296. <https://doi.org/10.1007/s13524-020-00897-1>
- Stockman, J. K., Hayashi, H., & Campbell, J. C. (2015a). Intimate Partner Violence and Its Health Impact on Disproportionately Affected Populations, Including Minorities and Impoverished Groups. *Journal of Women’s Health*, 24(1), 62–79. <https://doi.org/10.1089/jwh.2014.4879>
- Stockman, J. K., Hayashi, H., & Campbell, J. C. (2015b). Intimate Partner Violence and its Health Impact on Ethnic Minority Women [corrected]. *Journal of Women’s Health* (2002), 24(1), 62–79. <https://doi.org/10.1089/jwh.2014.4879>
- Stubbs, A., & Szoek, C. (2022). The Effect of Intimate Partner Violence on the Physical Health and Health-Related Behaviors of Women: A Systematic Review of the Literature. *Trauma, Violence, & Abuse*, 23(4), 1157–1172. <https://doi.org/10.1177/1524838020985541>
- Tankard, M. E., & Iyengar, R. (2018). Economic Policies and Intimate Partner Violence Prevention: Emerging Complexities in the Literature. *Journal of Interpersonal Violence*, 33(21), 3367–3387. <https://doi.org/10.1177/0886260518798354>
- Taylor, K., Compton, S., Kolenic, G. E., Scott, J., Becker, N., Dalton, V. K., & Moniz, M. H. (2021). Financial Hardship Among Pregnant and Postpartum Women in the United States, 2013 to 2018. *JAMA Network Open*, 4(10), e2132103. <https://doi.org/10.1001/jamanetworkopen.2021.32103>

- Taylor, Y. J., Liu, T.-L., & Howell, E. A. (2020). Insurance Differences in Preventive Care Use and Adverse Birth Outcomes Among Pregnant Women in a Medicaid Nonexpansion State: A Retrospective Cohort Study. *Journal of Women's Health, 29*(1), 29–37. <https://doi.org/10.1089/jwh.2019.7658>
- Walton-Moss, B. J., Manganello, J., Frye, V., & Campbell, J. C. (2005). Risk Factors for Intimate Partner Violence and Associated Injury Among Urban Women. *Journal of Community Health, 30*(5), 377–389. <https://doi.org/10.1007/s10900-005-5518-x>
- Waterman, E. A., McLain, M., Zulfiqar, H., Ahmar Qadeer, T., & Ciavoi, S.-M. (2024). The Link Between Intimate Partner Violence and Food Insecurity: A Review of Quantitative and Qualitative Studies. *Trauma, Violence, & Abuse, 25*(2), 1511–1530. <https://doi.org/10.1177/15248380231186152>
- WIC Eligibility Requirements | Food and Nutrition Service.* (2025). <https://www.fns.usda.gov/wic/applicant-participant/eligibility>
- Yakubovich, A. R., Stöckl, H., Murray, J., Melendez-Torres, G. J., Steinert, J. I., Glavin, C. E. Y., & Humphreys, D. K. (2018). Risk and Protective Factors for Intimate Partner Violence Against Women: Systematic Review and Meta-analyses of Prospective–Longitudinal Studies. *American Journal of Public Health, 108*(7), e1–e11. <https://doi.org/10.2105/AJPH.2018.304428>
- Zinga, J., McKay, F. H., Lindberg, R., & van der Pligt, P. (2022). Experiences of Food-Insecure Pregnant Women and Factors Influencing Their Food Choices. *Maternal and Child Health Journal, 26*(7), 1434–1441. <https://doi.org/10.1007/s10995-022-03440-3>