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The Earned Income Tax Credit and Intimate Partner Violence

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Abstract

Intimate partner violence (IPV) is a serious public health problem in the United States with adverse consequences for affected individuals and families. Recent reviews of the literature suggest that economic policies should be further investigated as part of comprehensive strategies to address IPV. The Earned Income Tax Credit (EITC) is the nation's largest anti-poverty program for working parents, and especially benefits low-income women with children, who experience an elevated risk of IPV. The EITC may prevent IPV by offering financial resources; such resources may help individuals experiencing IPV leave abusive relationships or address IPV risk factors, thereby preventing entry into abusive relationships. However, the association between EITC generosity and IPV has not been previously examined. We used state-level and individual-level datasets to examine the association between EITC generosity and IPV. Our state-level data source was the nationally representative National Crime Victimization Survey (NCVS; N = ~ 95,000 households per year). For NCVS, we used a difference-in-difference approach to investigate the relationship between state EITC generosity and IPV rates. We also used individual-level longitudinal data from the Fragile Families and Child Well-being Study (n = 13,422 person-waves). Using this cohort of US families at higher risk for IPV, we evaluated associations between estimated EITC benefits based on the mother's state of residence and number of children and self-reported IPV. In both state- and individual-level analyses, no significant association between state EITC benefits and IPV was found. Factors that may account for these null findings include program ineligibility for individuals who separate from abusive spouses. Future research efforts should more closely examine EITC policy implementation processes and the lived experience of participating in anti-poverty programs for people experiencing IPV.

Introduction

Intimate partner violence (IPV) is a common, consequential, and preventable public health problem (Campbell, 2002). IPV consists of physical violence, sexual violence, and psychological or emotional violence (including behavior designed to control a victim's

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Supplemental Material

Supplemental material for this article is available online.

Persons interested in obtaining Fragile Families data should see <http://www.fragile-families.princeton.edu> for further information.

movements, social contacts, and access to financial resources), perpetrated by a person's spouse or romantic partner (Saltzman et al., 1999). In the United States, one out of four women and one out of ten men have experienced IPV and reported notable consequences in their lifetime (Smith et al., 2018).

IPV is associated with a range of interconnected health and social consequences for individuals and their families (Campbell, 2002; Niolon et al., 2017). For instance, IPV is associated with increased risk of subsequent psychological distress and suicidality among female victims (Devries et al., 2013), and children exposed to IPV often experience negative mental health consequences (Graham-Bermann et al., 2009). Additionally, IPV can exacerbate poverty by limiting victims' opportunities for employment and financial well-being (Showalter, 2016). Overall, IPV takes a substantial toll on individuals, families, and society; the population economic burden of medical, lost productivity, and mental health costs of IPV in the United States is approximately \$3.6 trillion over affected individuals' lifetimes (Peterson et al., 2018).

The Centers for Disease Control and Prevention have recommended a variety of approaches at the individual, community, and societal levels to reduce the burden of IPV (Niolon et al., 2017). Enhancing economic supports, such as through social welfare policies that directly enhance the finances of economically vulnerable populations, is one promising approach (Osypuk et al., 2014). It has been hypothesized that these policies could have significant potential downstream influences on a wide variety of public health issues, including complex problems like IPV (Klevens et al., 2017; Matjasko et al., 2013; Tankard & Iyengar, 2018). Focusing on social welfare policies aligns with population health theories that underscore the importance of intervening on ubiquitous exposures. Even if the influences of social welfare policies on IPV are modest, on average, compared to more targeted interventions, their broad reach could lead to significant advancements in population health (Rose et al., 2008). Social welfare policies could have an immediate influence on IPV, complementing longer-term and more targeted efforts to reduce IPV through shifting broader social norms and attitudes (Ellsberg et al., 2015). Further, social welfare policies may be a promising vehicle for addressing IPV since they broadly reach households with low socioeconomic status who experience a disproportionate burden of IPV (Cunradi et al., 2002; Tankard & Iyengar, 2018).

Recent review articles lay a conceptual foundation for investigations of the complex role that social welfare policies may play in addressing IPV (Matjasko et al., 2013; Tankard & Iyengar, 2018). Tankard and Iyengar (2018) describe how social welfare policies, particularly cash assistance programs, may facilitate primary prevention (e.g., preventing entrance into abusive relationships) and secondary prevention of IPV (e.g., facilitating ending abusive relationships or reducing violence in those relationships). Their conceptual framework linking economic policies and IPV is shown in Supplemental Figure 1. This model guides our understanding of the mechanisms that could explain associations between receipt of social welfare programs and IPV.

For primary prevention, receipt of such programs may promote social, economic, and psychological empowerment by increasing a potential victim's bargaining power and options

within relationships. These programs could also reduce cognitive and behavioral risk factors (e.g., stress), which could protect an individual from entering into high-risk relationships and experiencing IPV. For secondary prevention, enhanced economic resources may help victims of IPV overcome financial barriers to leaving an abusive relationship (Matjasko et al., 2013). Alternatively, the additional financial resources could improve relationship quality by reducing financial stress. Financial stress is a predictor of IPV (Reese et al., 2015) and reductions in financial stress may increase one's ability to engage in executive decision-making and nonviolent conflict resolution (Duncan et al., 2017).

In contrast, certain bargaining models suggest that income support might increase IPV if it increases women's bargaining power in the relationship and leads male partners to reassert control (Hidrobo & Fernald, 2013). In addition, the effects of income may be modified by individual characteristics, such as education or marital status, which could lead to offsetting positive and negative effects for different groups. In the evaluation of Ecuador's unconditional cash transfer program, cash transfers were associated with decreased psychological IPV only for women with higher levels of education (Hidrobo & Fernald, 2013).

Although few studies evaluate the relationship between social welfare policies and IPV in higher-income countries (Matjasko et al., 2013; Tankard & Iyengar, 2018), literature outside of the United States on women's financial empowerment and IPV provides a valuable evidence base. Recent review articles specific to low- and middle-income countries suggest that cash assistance (i.e., cash transfer) programs could be an important strategy for reducing IPV (Baranov et al., 2020; Buller et al., 2018). For example, of the 14 studies summarized in the review by Buller et al. (2018), 11 identified a statistically significant association between cash assistance programs and reductions in IPV. While most programs had modest individual-level impacts, one cash assistance program was associated with a 30% reduction in IPV rates. A more recent review of studies in low- and middle-income countries predominantly identified null or mixed findings (Baranov et al., 2020).

The Earned Income Tax Credit (EITC) is the most extensive social welfare program for low-earning households with children in the United States. In 2018, the EITC lifted an estimated 5.6 million persons out of poverty and reduced the severity of poverty for another 16.5 million persons (Center on Budget and Policy Priorities, 2020). Implemented federally in 1975, the EITC provides low-earning households an annual tax credit based on their pretax earnings, marital status, and their number of dependents. In recent decades, many states have augmented the federal EITC with state EITCs. The majority of these state EITCs are refundable, which means that any tax credit amount beyond an individual's tax liability is refunded, or issued as payment, by the state tax agency to the filer. Refundable state EITCs vary greatly over time; for instance, it ranged from 3.4% (Indiana, 1999–2002 for families with at least one dependent) to 85% (California, 2015+) of the federal credit (National Bureau for Economic Research (NBER), 2019).

To our knowledge, few studies have examined the relationship between the EITC and IPV in the United States. A study that examined the association between EITC generosity and intimate partner homicide—the most severe form of IPV—did not identify a statistically

significant association (Moe et al., 2020); other studies examining relationships between economic policies and IPV-related outcomes have mixed findings (Hsu, 2017; Spencer et al., 2020). A randomized control trial of a supplemental income program with strong similarities to the EITC provides the strongest evidence to date. The Minnesota Family Investment Program was a two-year pilot program launched in 1994 to encourage work for persons receiving cash assistance without time limits or sanctions (Gibson-Davis et al., 2005). Individuals in the two treatment groups (financial incentives with employment mandates, financial incentives with no mandates) each had a 9% lower probability than the control group of reporting any IPV 3 years after program completion (Gibson-Davis et al., 2005). Given the totality of the evidence linking social welfare programs to positive health and social outcomes (Osypuk et al., 2014), we hypothesized that EITC would be associated with decreased IPV.

The heterogeneity across states and changes over time in EITC generosity provide ample opportunities for quasi-experimental studies of EITC's association with health and social outcomes (Arno et al., 2009). There is evidence that the EITC is associated with maternal and child health (Berger et al., 2017; Hamad & Rehkopf, 2016; Hoynes et al., 2015; Markowitz et al., 2017) and longer-term adult health outcomes (Collin et al., 2020; Pega et al., 2013). Notably, while various earlier studies examining the EITC and adult health outcomes did not find strong evidence of association (Pega et al., 2013), recent studies using more rigorous analytic approaches have identified positive associations between EITC and adult health (AcademyHealth, 2017; Morgan et al., 2020).

Despite theoretical models and observations of related programs suggesting that EITC might prevent IPV, associations between EITC and IPV have rarely been empirically examined. To fill this gap, this study uses two distinct national data sources—the National Crime Victimization Survey (NCVS) and the Fragile Families and Child Well-being Study (FFCWS)—and analytic approaches to examine the relationship between EITC and IPV. NCVS can be used to estimate state-level associations, and FFCWS includes socially disadvantaged populations for whom the influences of EITC are likely most prominent. Together, these data sources facilitate two analyses that uniquely estimate ecological and individual-level associations, contributing robust evidence to the limited research on the association between EITC and IPV.

Methods

Independent Variable

In both analyses, our exposure was state EITC generosity, defined as the combined maximum federal and state EITC benefit in a given year. Secondly, we conducted analyses with state EITC generosity parameterized as the percent of federal EITC in increments of 10% points. During the observation period, 10 states implemented a new refundable EITC or increased EITC generosity: Connecticut (2011), Delaware (2006), Indiana (2003, 2009), Louisiana (2008), Michigan (2008, 2009), Nebraska (2006, 2007), New Mexico (2007, 2008), North Carolina (2007, 2008), Oklahoma (2002), and Virginia (2006). We obtained data on EITC benefits (both maximum EITC benefit and percentage of

federal) from the University of Kentucky Center for Poverty Research (UKCPR) (2019) and the NBER (2019).

The majority of state EITCs are “refundable,” meaning that any credit amount beyond an individual’s tax liability is refunded by the Internal Revenue Service (IRS). However, five states (Ohio, Virginia, Delaware, Hawaii, South Carolina) offer “nonrefundable” state EITCs, which offset tax liability but do not offer payment to filers. Nonrefundable EITCs have limited benefit to eligible low-income workers because it is uncommon for these workers to have a tax liability. Moreover, research suggests that nonrefundable EITCs are not associated with health outcomes, whereas refundable EITCs are (Klevens et al., 2017; Rostad et al., 2020). Thus, we considered states with nonrefundable state EITCs as not having a state EITC.

For the state-level analysis using NCVS, it was not possible to identify individual EITC benefits due to a lack of individual-level income and employment data. Therefore, we estimated the benefit as the maximum combined federal and state benefit for an eligible family with two dependents in a given state-year (Baughman & Duchovny, 2016). For the individual-level analysis using FFCWS, we measured the maximum estimated federal and state EITC benefit for each person-wave based on the year prior to the interview, their number of dependents, and their state of residence. The maximum estimated benefit was based on the year prior to the interview to ensure appropriate temporal ordering; outcomes were based on the concurrent experience of IPV. For each analysis, the maximum EITC credit was adjusted for inflation (in US dollars, to the year 2016 for NCVS and to the year 2009 for FFCWS) and was scaled into units of one thousand dollars. All analyses were conducted using Stata version 15.1 (StataCorp, College Station, TX), courtesy of the University of Washington Center for Studies in Demography and Ecology. This study was approved by the University of Washington Institutional Review Board.

State-level Analysis: National Crime Victimization Survey

State-level analysis: Data source.—For the state-level analysis, we used state-level IPV rates obtained from NCVS. NCVS is a nationally representative, annually conducted household survey administered by the Bureau of Justice Statistics with questions about the frequency of crime victimization and its characteristics and consequences (Heimer, 2008). About 160,000 individuals ages 12 and older are interviewed annually from a nationally representative sample of households and report the frequency and characteristics of criminal victimization in the past six months. The NCVS is considered one of the best sources for data on nonfatal crime, particularly IPV because it captures crime that was not necessarily reported to the police (Heimer, 2008).

State-level analysis: Outcome.—Incidents of IPV captured in the NCVS include violent crimes committed by spouses (current or former) or current intimate partners. Types of violent crimes in NCVS include simple and aggravated assault, robbery, and sexual assault. For the state-level analysis, the outcome was state-level rates of IPV per 1,000 population calculated from NCVS by Fay and Diallo (2015) for the years 1999–2013 using small area estimation models and auxiliary data from the FBI’s Uniform Crime Reporting

system. In this study, IPV was defined as a violent crime reported in NCVS, where the relationship between the victim and the offender was an “intimate partner.” In accordance with the approach described by Fay and Diallo, estimates for violent crime were calculated by type and by the victim’s relationship to the offender in three-year rolling averages for each state. Three-year rolling averages were used to account for unequally sized states and some missing jurisdiction reports. For example, the year 2006 was omitted due to significant methodological changes in the NCVS survey administration (Fay & Diallo, 2015).

State-level analysis: Covariates.—The covariates included state-level socioeconomic indicators, namely the state’s global domestic product (\$100,000s), maximum Temporary Assistance for Needy Families (TANF) benefit (\$1,000s), and state minimum wage (all from the UKCPR). We also controlled for state-level demographic indicators guided by prior literature: proportion of population uninsured, proportion of population identified as Black, proportion of population married and divorced (separately), proportion of households headed by females, and the ratio of females to males aged 25 or older with a college degree or higher educational attainment (Petrosky et al., 2017). All variables measured in US dollars were adjusted for inflation to the year 2016.

State-level analysis: Statistical analysis.—We used a difference-in-differences approach by constructing ordinary least squares linear regression models with state- and year- fixed effects to assess the role of state-level changes in EITC generosity on rates of IPV per 1,000 population (all ages) from 1999 to 2013. We calculated incidence rate differences (IRD), comparing states that did versus did not implement or change EITC during the observation period. We performed analyses with the EITC parameterized as the percent of federal EITC and assessed parallel trends through visual inspection and a Wald test of effect modification by time. We did not identify any significant violation of the parallel trend assumption through visual inspection or Wald test (p -value = 0.488; Dimick & Ryan, 2014).

Individual-level Analysis: Fragile Families and Child Well-being Study

Individual-level analysis: Data source.—For the individual-level analysis, we used the FFCWS, a longitudinal birth cohort of approximately 4,900 diverse families living in 20 large US cities (Reichman et al., 2001). FFCWS is a rich source of data on childhood and family systems, particularly for “fragile families” where parents were unmarried at the time of their child’s birth. Sampling for FFCWS began with an index child’s birth between 1998 and 2001, and represented a random sample of births in large cities of more than 200,000 residents (Reichman et al., 2001). Births among nonmarried parents were oversampled, and the sample was limited to births among heterosexual couples. The study used a three-stage stratified random sampling strategy: first sampling cities, then hospitals within cities, and finally, births within hospitals. Within the hospitals, random samples of both marital and nonmarital births were conducted until preset quotas were met based on the number of nonmarital births in the city that occurred within that hospital. Families excluded from the FFCWS included those who planned to place the child up for adoption, did not speak English or Spanish proficiently enough to complete an interview, whose mothers or babies were deceased or too ill to participate, or whose father was deceased.

FFCWS families were first interviewed at the time of the index child's birth (Wave 1), and at approximately ages 1 (Wave 2), 3 (Wave 3), 5 (Wave 4), 9 (Wave 5), and 15 (Wave 6) years. Waves 2 through 5 consistently assess maternal exposure to IPV. These questions have been previously used in analyses examining IPV using FFCWS (Huang et al., 2010; Schneider et al., 2016; Taylor et al., 2009). There was loss to follow-up in FFCWS due to study attrition and nonresponse between waves, most notably when comparing Waves 2 and 5.

Individual-level analysis: Sample.—We used maternal surveys beginning in Wave 2 until Wave 5. Inclusion/exclusion criteria are detailed in Supplemental Figure 2. Wave 2 was selected as baseline because standardized IPV data were not collected in Wave 1. The sample was limited to mothers who reported having less than a high school education, a high school or equivalent degree, or some college or technical training (e.g., less than a 4-year college education or graduate degree) at baseline. This focuses the analysis on persons most likely to benefit from the EITC benefit and is congruent with the approach of economic and epidemiologic studies examining outcomes associated with the EITC (Hoynes et al., 2015; Markowitz et al., 2017), in the absence of individual-level data on actual receipt of EITC benefits. Had we included all families in the study, we would anticipate our estimates would be attenuated by including families who are ineligible for the EITC. We chose to include mothers with some college or technical training in the sample because these women were more similar in sociodemographic characteristics and IPV prevalence to their counterparts with lower levels of education than women with a 4-year college education or graduate degree. We further limited the sample to those person-waves with complete geographic and sociodemographic data ($n = 558$ persons were dropped). Persons dropped due to incomplete data appeared similar to those included, albeit a higher proportion of persons dropped due to incomplete data were of Hispanic (35%) or Other/Unknown (5%) race/ethnicity. To account for EITC's potential to prevent entry into abusive relationships, individuals who were not in romantic relationships were recorded as not experiencing IPV. Since prior EITC receipt could affect relationship status, we chose to include mothers not in a romantic relationship at the time of the interview congruent with prior literature using FFCWS (Schneider et al., 2016).

Individual-level analysis: Outcomes.—The primary outcome in this analysis was a composite IPV variable for any abuse by a romantic partner. In accordance to prior literature (Huang, Wang et al., 2010; Schneider et al., 2016; Taylor et al., 2009), emotional abuse was considered present if the respondent answered “often” or “sometimes” to the following questions asked about the respondent's current partner: (a) He tries to keep you from seeing or talking with your friends or family, (b) He tries to prevent you from going to work or school, and (c) He withholds money, makes you ask for money, or takes your money. Physical abuse was considered present if the respondent answered “often” or “sometimes” to either of the following questions asked about the respondent's current partner: (a) He slaps or kicks you or (b) He hits you with a fist or an object that could hurt you. Finally, sexual abuse was considered present if the respondent answered “often” or “sometimes” to the following: He tries to make you have sex or do sexual things you don't want to do. These questions are considered relevant to ascertaining current IPV experiences (Schneider et al., 2016), even though they are not limited to a given time period (e.g., the past month).

IPV was coded as present if the respondent experienced emotional abuse, physical abuse, or sexual abuse.

Additionally, we examined two secondary outcomes related to IPV that may be affected by EITC: (a) supportiveness, an indicator of relationship quality and (b) cumulative family financial hardship. Supportiveness was defined by responses to four questions about the frequency of the following qualities related to the mother's romantic partner: is/does the partner (a) fair and willing to compromise, (b) show you love and affection, (c) help you do things important to you, and (d) partner insults or criticizes you (reverse coded). Responses were coded as often = 2, sometimes = 1, never = 0 for a total score ranging from 0 to 8, with the highest scores indicative of the most supportive relationships (Huang, Son et al., 2010).

Cumulative family financial hardship in the past 12 months was measured with nine indicators of past-year material hardship (Pilkaukas et al., 2012): (a) received free food, (b) could not pay the full amount of rent/mortgage, (c) got evicted for not paying rent/mortgage, (d) gas/electric shut-off or withheld, (e) telephone disconnected for nonpayment, (f) borrowed money from family/friends to pay bills, (g) moved in with people because of financial problems, (h) stayed in a place not meant for regular housing, or (i) someone in household needed a doctor but could not go. The score ranged from 0 to 9. We excluded observations from the analysis of supportiveness and financial hardship if they were missing one of those outcomes.

Individual-level analysis: Covariates.—We adjusted for potential confounders based on a priori knowledge of populations most likely to receive EITC and experience IPV and only included covariates if they were not likely to be affected by past EITC exposure. Models were adjusted for sociodemographic factors related to IPV and receipt of EITC: maternal age at Wave 2 classified into three categories (15–24, 25–29, 30–50), mother's highest level of educational attainment at Wave 2 (less than high school, high school, some college), maternal race/ethnicity (non-Hispanic Black, non-Hispanic White, Hispanic, Other/Unknown), whether the mother was born in the United States (binary), and number of dependents living in the household (categorized into 0, 1, 2, or 3+). We opted not to control for characteristics like the mother's relationship status, household income, employment status, and average hours worked as these are endogenous to our exposure of interest, the EITC tax credit.

Individual-level analysis: Analysis.—Descriptive statistics were used to present prevalence of individual characteristics of the sample at the baseline wave and prevalence of outcomes across waves. For inferential analyses, we fit mixed effects logistic and Poisson regression models (to estimate odds ratios [ORs] and prevalence ratios [PRs] and 95% confidence intervals [CIs] for binary and count outcomes, respectively) with robust standard errors and a random intercept for the individual to account for the clustering of observations within persons. Models were presented unadjusted and adjusted for pre-specified sets of hypothesized confounders of the association between EITC and IPV (and secondary outcomes using mixed effects Poisson regression models). The adjusted model included maternal sociodemographic factors, year of interview, and their number of dependents.

We conducted several sensitivity analyses. First, we limited the sample to only those who reported filing for EITC based on the question, “On your last federal tax return, did you fill out a special form to claim the Earned Income Credit?” Person-waves where the individual indicated they had filled out a form to claim the EITC in the past year were used; $n = 2,603$ persons; $n = 5,982$ person-waves. Due to the complex hypothesized dynamics of cash support and IPV (e.g., potential time-varying confounders affected by prior EITC receipt), we did not examine the cumulative role of EITC generosity in IPV. However, we implemented a longitudinal individual fixed effects approach (Gunasekara et al., 2014), which estimates a within-person average association, on a subsample of individuals ($n = 1,014$ persons; $n = 3,727$ person-waves), whose IPV status changed over time; these individuals appeared similar to the main sample, albeit a lower proportion identified as non-Hispanic Black (44%).

Results

State-level Analysis: NCVS

During the study period, state-level rates of IPV ranged from 1.4 incidents per 10,000 residents in New Jersey (observed in years 2010–2012 and 2011–2013) to 8.3 IPV incidents per 1,000 in Washington state (observed in years 1999–2001, 2001–2003, and 2007–2009; Supplemental Table 1). We did not find a statistically significant association of state EITC generosity with state-level rates of reported IPV. In the adjusted model, each additional \$1,000 of maximum state EITC to a family with two dependents was not significantly associated with rates of IPV per 1,000 population (IRD = -0.15 , 95% CI = $-0.59, 0.29$; Table 3). When state EITC generosity was parameterized as its percentage of federal EITC, state EITC was also not associated with IPV rates per 1,000 population (IRD = 0.01 ; 95% CI = $-0.02, 0.05$).

Individual-level Analysis: FFCWS

In the full sample of $n = 3,800$ unique persons, 28% of all persons reported experiencing IPV at any time throughout the study. Table 1 shows characteristics of the sample at baseline and across follow-up waves. At baseline, the mean age was approximately 26 years, 50% were non-Hispanic Black, 29% were of Hispanic ethnicity, and 18% were non-Hispanic White. The average maximum estimated EITC benefit was approximately \$4,400 in 2009-inflated dollars. Approximately half of respondents reported being employed for regular pay in the last week, the mean estimated annual household earnings was around \$26,000, and most were married or cohabitating. The sample was concentrated in 15 states that had at least 50 study respondents residing in them, as expected based on the study’s sampling schema.

Over the course of the study, the prevalence of any reported IPV across the population varied, ranging from 8% to 15% of persons at each wave (Supplemental Table 2). A high prevalence of reported emotional abuse appeared to drive the overall prevalence of IPV; among those in relationships, the prevalence of emotional abuse, alone, ranged from around 7% to 14% across waves, while physical and sexual abuse were each reported by fewer than 2% of participants at each wave. Relationship supportiveness was generally rated as high

across waves with the mean between 6.2 and 6.7 (highest possible was 8). The count of instances of financial hardship was generally low, with a mean between 0.9 and 1.2 (highest possible was 9).

In multivariable mixed models, each \$1,000 of maximum estimated EITC was not associated with any IPV (OR: 0.98, 95% CI: 0.79–1.21) or supportiveness (PR: 1.00, 95% CI: 0.90–1.01; Table 2). Each additional \$1,000 of maximum estimated EITC was negatively associated with financial hardship (PR: 0.91, 95% CI: 0.83–1.00). When analyses were run in a subsample of individuals who reported filing for EITC (Supplemental Table 3), findings were largely aligned with primary findings for IPV or supportiveness; however, in this subsample, the relationship between financial hardship and each \$1,000 of maximum estimated EITC observed in the adjusted model was no longer statistically significant (PR: 0.90, 95% CI: 0.80–1.01). When EITC generosity was parameterized as a percent of the federal EITC, similar associations were observed between EITC generosity and all outcomes, with the exception of financial hardship among the subsample who reported filing for EITC. Finally, when analyses were run using a fixed effects approach, we did not find evidence to suggest that changes in estimated EITC generosity were associated with IPV (Supplemental Table 4).

Discussion

We examined associations between EITC generosity and IPV in two analyses—an ecological study using state-level NCVS data and an individual-level analysis using longitudinal FFCWS data. Thus, while NCVS could estimate state-level associations, FFCWS disproportionately included individuals in low-income households who would likely disproportionately benefit from the EITC. Neither analysis identified a statistically significant association between EITC generosity and IPV, although our FFCWS analysis suggested that EITC generosity was associated with reduced financial hardship. These findings add to the limited literature on the role of anti-poverty programs in IPV in the United States and encourage additional exploration regarding why the EITC program was not associated with lower levels of IPV.

We hypothesized that additional income from EITC would play a primary prevention role in IPV through empowerment and reducing cognitive and behavioral risk factors, or a secondary prevention role by providing financial support to victims of IPV that could help them leave abusive relationships. There are multiple reasons that may explain our finding of a lack of association between EITC and IPV. Administrative burdens and restrictive rules may play an important role. Specifically, eligible persons do not automatically receive the EITC; to receive the EITC, they must learn about and apply for the credit by filing income taxes with the IRS and their state tax agency. As a consequence, take-up rates among EITC eligible families are 78% nationally and vary substantially by state (IRS, 2020). Such burdens could disproportionately affect people in stressful situations (Herd & Moynihan, 2019), such as victims of IPV. Also, due to tax filing status rules, married people who experience IPV may be excluded from receiving the EITC if they separate from their partners. Unlike other programs like TANF with its Family Violence Option (Showalter, 2016) and unemployment insurance (Matjasko et al., 2013), EITC programs do

not accommodate individuals who have left, or are seeking to leave, abusive relationships. In Massachusetts, state legislators included provisions in 2018 for victims of IPV or abandoned spouses to remain eligible for EITC. Policymakers and IPV advocates should monitor the implementation and outcomes of Massachusetts' EITC provisions to identify how to optimally modify eligibility criteria to increase EITC access for IPV victims. Finally, current laws allow the IRS to seize all of a person's EITC benefit to satisfy a debt owed to the government, which may decrease the EITC's influence (Elliott, 2010).

Another reason for null findings could be that cash transfer programs have the unintended consequence of exacerbating IPV for some individuals while decreasing IPV for others. A prior study of the TANF program found that monthly payments were positively associated with IPV, which may be due to increased alcohol consumption by abusive partners or increased exertion of control over incoming financial resources (Hsu, 2017). Most studies on the relationship between cash transfers and decreased IPV were in low- and middle-income countries and many had positive findings; however, others had null results and negative associations (Buller et al., 2018). Some studies have found that transfers may reduce physical violence despite increasing threats (Bobonis et al., 2013), and others have identified protective associations between cash transfers and IPV for highly-educated women only (Hidrobo & Fernald, 2013).

A third obstacle that may prevent persons experiencing IPV from benefitting from EITC is the frequent presence of economic abuse (e.g., controlling victim's finances, employment, assets) in relationships with IPV. For example, an abuser may prevent their partner from going to work or from accessing bank accounts (Adams et al., 2008). Existing evidence indicates that economic abuse (also known as financial abuse) is very common among people who experience IPV (Postmus et al., 2020); for example, among a sample of IPV victims, 94% had experienced some form of economic abuse (Postmus et al., 2012). Economic abuse may interfere with hypothesized mechanisms linking EITC and IPV as people experiencing economic abuse would likely not be in charge of household finances (i.e., filing for EITC) and may not have access to their earnings and EITC benefits. Thus, a tax credit-based distribution mechanism like EITC may have little benefit to most individuals in economically abusive relationships.

Our findings diverge from prior studies of a program similar to EITC, the Minnesota Family Investment Program, which was found to be associated with reductions in IPV (Gibson-Davis et al., 2005). Differences in target populations, differences in benefits (e.g., timing, generosity, features), and lag time in assessing IPV may explain why the findings of the current study do not align with those identified in the Minnesota program evaluation. As reported by Gibson-Davis et al. (2005), the Minnesota program was piloted between 1994 and 1996 and was designed to encourage work for recipients of the Aid to Families with Dependent Children (AFDC) cash assistance welfare program. These recipients were predominantly single parents, whereas the target population for the EITC is a broader group of low-income families, including couples. Further, in terms of program design, the EITC does not offer additional supports such as childcare vouchers and job training that may promote empowerment and financial independence. The timing and generosity of EITC benefits are also largely different than those provided in the Minnesota program, as EITC

benefits must be applied for annually and are provided in a yearly lump sum (as opposed to monthly payments over two years). These substantial differences illuminate potential program design and implementation issues within EITC programs that may help explain our findings. In sum, we encourage researchers and policymakers to carefully consider target populations as well as program design and implementation issues when evaluating the role of social welfare policies in IPV.

Limitations

While NCVS and FFCWS represent some of the best sources of data available to study relationships between EITC and IPV, results should be interpreted in light of some limitations. The NCVS IPV measure captured common indicators of physical and sexual abuse but did not capture emotional abuse and other forms of abuse. For the NCVS analyses, three-year rolling averages were necessary to account for state size and missing jurisdiction reports. For the FFCWS data, key challenges included selection bias due to loss to follow-up and social desirability bias, which could lead to underreporting of stigmatized issues like IPV. We were unable to include experiences of IPV from separated partners since questions between Waves 2 and 5 on IPV were only asked in relation to current intimate partners (the focal child's father or a new intimate partner); these waves do not include consistent questions about abuse by former partners or other intimate partners. Both analyses examine a binary, composite measure of IPV rather than typologies of IPV or IPV severity. Future work could consider whether there are distinct associations between social welfare program support and IPV typologies or IPV severity. Furthermore, both analyses may be prone to measurement error, unmeasured confounding, and simultaneity. We could not ascertain individual EITC exposure, although we attempted to determine the population most likely to receive EITC in the FFCWS data by limiting to mothers with lower levels of educational attainment. Such measurement error in assigning EITC could attenuate estimates, leading us to underestimate associations. Unmeasured confounders could bias estimates in unpredictable ways. Finally, simultaneity—endogeneity that arises because the estimate is correlated with error term—cannot be ruled out.

Diversity Statement

These findings are applicable and generalizable to racially and socioeconomically diverse populations due to the design of the FFCWS and the NCVS. Parents who identify as Black or Hispanic, and who have lower levels of education, are over-represented in the FFCWS. Nevertheless, FFCWS may not represent all populations who benefit from EITC as the analysis focused on IPV experienced by women with children in heterosexual relationships, and the sample was limited to births within major cities and did not include persons who did not speak English or Spanish. Therefore, findings may not apply to people of all genders and sexual orientations, women without children, men who experience IPV, residents of rural areas, and non-English and non-Spanish speakers. With respect to diversity, the NCVS is subject to limitations, including exclusion of incarcerated or homeless individuals, but is otherwise a nationally representative survey of American adults, and is not subject to the same limitations of FFCWS. Our replication of the null finding in NCVS thus partially mitigates our concern that our FFCWS findings might be an artifact of sample selection.

Conclusion

IPV is a complex public health problem urgently in need of evidence-based primary prevention and secondary prevention strategies (Dixon & Graham-Kevan, 2011). While there is evidence that IPV victimization is more common among people of low socioeconomic status (Cunradi et al., 2002) and recipients of welfare programs (Tolman & Raphael, 2000), the EITC's role in primary and secondary prevention of IPV remains unclear. We presented both individual-level and state-level analyses using high-quality US-based data sources and did not find evidence of an association between EITC generosity and IPV. Future research could provide insight into heterogeneity of EITC effects (e.g., across characteristics of victims and abusive partners), and how EITC could be tailored toward IPV primary prevention or supporting IPV victims in leaving abusive partners or gaining financial independence. For instance, the EITC may work synergistically with other policy tools to address barriers to workforce participation among people experiencing IPV (e.g., childcare, job training, and empowerment) and access to household finances (e.g., independent bank accounts). Future research on EITC and other social welfare programs not explicitly designed to influence health should further examine policy design and implementation issues. Careful consideration of the dynamics of abusive relationships and additional efforts to increase access to the EITC for potential victims of IPV may be necessary to effectively leverage this anti-poverty program as a tool for IPV prevention.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Characteristics of Fragile Families and Child Well-being Study Sample, at Baseline and Follow-up Person-waves.

	Baseline wave		Follow-up Person-waves	
Sample characteristics	n = 3,800		n = 9,622	
Age in years at baseline, (mean[SD])	26	(6.0)	-	-
Age at baseline, in categories				
15–24	1,979	52%	-	-
25–29	954	25%	-	-
30–50	867	23%	-	-
Educational attainment				
<High school	1,312	35%	3,209	33%
High school or equivalent	1,280	32%	3,316	35%
Some college	1,208	32%	3,097	32%
Race/ethnicity				
Non-Hispanic Black	1,912	50%	4,987	52%
Hispanic	1,106	29%	2,673	28%
Non-Hispanic White	669	18%	1,696	18%
Other/unknown	113	3%	266	3%
Born in the United States	3,220	85%	8,298	86%
Number of dependents in household				
0	21	<1%	215	2%
1	1,112	29%	2,027	21%
2	1,256	33%	3,116	32%
3 or greater	1,411	37%	4,264	44%

Note. Variable distributions are reported as n, % unless otherwise specified.

Association Between EITC Generosity and Outcomes, Fragile Families and Child Well-being Study (n = 3,800 Persons, n = 13,422 Person-waves).

Table 2.

	EITC, \$1000s				EITC, % of Federal					
	Unadjusted		Adjusted		Unadjusted		Adjusted			
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI		
Any IPV ^a	0.97	(0.91–1.04)	0.418	0.98 (0.79–1.21)	0.832	0.94 (0.84–1.05)	0.243	1.00 (0.90–1.11)	0.986	
	PR	95% CI	p-value	PR	95% CI	PR	95% CI	PR	95% CI	p-value
Supportiveness ^b	0.97	(0.91–1.05)	0.504	1.00 (0.90–1.01)	0.724	1.00 (0.98–1.00)	0.350	0.98 (0.99–1.01)	0.487	
Financial Hardship ^c	1.00	(0.98–1.03)	0.720	0.91 (0.83–1.00)	0.045	0.96 (0.92–1.01)	0.103	0.95 (0.91–0.99)	0.022	

Note. Adjusted for age in categories, educational attainment, race/ethnicity, nativity, number of dependents, and interview year

^a estimates from a mixed effects logistic model with a random intercept for person and robust standard errors

^b limited to n = 9,597 person-waves; n = 3,525 unique persons; these are prevalence ratio [PR] estimates from a mixed effects poisson model with a random intercept for person and robust standard errors

^c limited to n = 13,366 person-waves; n = 3,800 unique persons; these are PR estimates from a mixed effects poisson model with a random intercept for person and robust standard errors

Table 3.

Association Between State Expansions in EITC Generosity and IPV Incidence per 1,000 population, National Crime Victimization Survey.

		IRD	95% CI	p-value
EITC, \$1,000s	Crude model	-0.17	(-0.55, 0.20)	0.359
	Adjusted ^a model	-0.15	(-0.59, 0.29)	0.503
EITC, % of Federal	Crude model	0.004	(-0.03, 0.04)	0.830
	Adjusted ^a model	0.01	(-0.02, 0.05)	0.515

Note.

^aAdjusted for state-level indicators: gross state product, maximum TANF benefits, minimum wage, ratio of females to males aged 25 or older with college education or higher, proportion of households headed by females, and proportion of the population uninsured, married, Black, and divorced. IRD = incidence rate difference

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