








## ORIGINAL ARTICLE

# Preventing intimate partner violence among foreign-born Latinx mothers through relationship education during nurse home visiting

Qing Li MD, DrPH, Adjunct Associate Professor<sup>1</sup>  |  
Fernando Riosmena PhD, Associate Professor<sup>2</sup>  |  
Patricia A. Valverde PhD, MPH, Interim Director, Clinical Assistant Professor<sup>3</sup>  |  
Shuo Zhou PhD, Research Assistant Professor<sup>4</sup>  |  
Claudia Amura PhD, MPH, Research Assistant Professor<sup>5</sup>  |  
Kerry A. Peterson PhD, DNP, Associate Professor, Specialty Director PMHNP Program<sup>5</sup> |  
Vincent J. Palusci MD, MS, Professor<sup>6</sup>  | Lynette Feder PhD, Professor<sup>7</sup> 

<sup>1</sup>School of Public Health, San Diego State University, San Diego, California, USA

<sup>2</sup>Population Program and Geography Department, University of Colorado Boulder, Boulder, Colorado, USA

<sup>3</sup>Latino Research and Policy Center, Colorado School of Public Health, University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA

<sup>4</sup>Department of Community and Behavioral Health, Colorado School of Public Health, University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA

<sup>5</sup>College of Nursing, University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA

<sup>6</sup>Grossman School of Medicine, New York University, New York, New York, USA

<sup>7</sup>Department of Criminal Justice, University of Central Florida, Orlando, Florida, USA

## Correspondence

Qing Li, School of Public Health, San Diego State University, San Diego, CA, USA.  
Email: [qing.li@sdsu.edu](mailto:qing.li@sdsu.edu)

## Funding information

University of Colorado School of Medicine, Anschutz Medical Campus; Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant/Award Numbers: R25HD094660, P2CHD066613; National Center for Injury Prevention and Control, Grant/Award Numbers: R49CE000556, U49CE000516

## Abstract

**Aims:** This study aimed to examine the effectiveness of an augmented home visiting programme in preventing intimate partner violence among Latinx mothers by nativity.

**Background:** Intimate partner violence diminishes home visit programmes' effectiveness. Immigrant Latinx mothers are especially vulnerable and need culturally tailored prevention.

**Methods:** We performed secondary analyses of 33 US-born and 86 foreign-born Latinx mothers at baseline and 1- and 2-year follow-up in a longitudinal randomized controlled trial of the Nurse-Family Partnership programme augmented with nurse-delivered *Within My Reach* relationship education curriculum and violence screening and referrals in Oregon. We estimated proportional odds models via generalized estimating equations on total physical and sexual victimization and/or perpetration forms (an ordinal variable), adjusting for intervention, wave, age and education.

**Results:** The intervention–nativity interaction was not significant ( $p = .953$ ). Foreign-born status was associated with lower reported violence at baseline (adjusted odds

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2022 The Authors. *Journal of Nursing Management* published by John Wiley & Sons Ltd.

ratio: 0.29, 95% confidence interval: 0.13–0.67,  $p = .004$ ). This association was marginally significant at 1-year follow-up (0.43, 0.17–1.08,  $p = .072$ ) and not significant at 2-year follow-up (0.75, 0.33–1.67,  $p = .475$ ).

**Conclusions:** This augmented programme was not effective for Latinx mothers by nativity. Their nativity gap diminished over time.

**Implications for Nursing Management:** Nursing leaders should support culturally tailored home visiting programmes to detect and prevent intimate partner violence affecting Latinx immigrants.

**Clinical Trial Registration:** This study is registered at [www.clinicaltrials.gov](http://www.clinicaltrials.gov) NCT01811719. The full trial protocol can be accessed at <https://clinicaltrials.gov/ct2/show/NCT01811719>.

#### KEYWORDS

immigrant Latinx health, intimate partner violence, maternal and child health nursing, nurse-delivered home visitation, randomized controlled trial, relationship education programmes

## 1 | INTRODUCTION

Early home visiting is a service delivery model and a vital health promotion strategy for vulnerable families (Condon, 2019). Despite these goals and the overall effectiveness of home visits on maternal and child outcomes, for example, a 48% reduction in child maltreatment (Kitzman et al., 1997; Olds et al., 1997), intimate partner violence (IPV) has been common and particularly challenging to detect and address with home visiting (Sharps et al., 2008). Across all 19 home visiting models in the Maternal, Infant, and Early Childhood Home Visiting Program in the United States (Condon, 2019; Maternal and Child Health Bureau, 2020), IPV has been widely screened (Lachance et al., 2020), is quite common (26%) (Duggan et al., 2018) and likely dampens the effectiveness of service delivery (Eckenrode et al., 2000).

Latinx mothers are particularly vulnerable to IPV. Although the prevalence and even some impacts of IPV may be similar for Latina and non-Latina women, particularly after risk factors are controlled for (Bonomi et al., 2009; Klevens, 2007), several studies do suggest Latina women suffer IPV more frequently due in large part to said risk factors (Klevens, 2007). Besides structural and sociocultural factors leading to more hierarchical gender relations affecting Latin American and, to some extent, US-born Latinx women (Cianelli et al., 2008; Mancera et al., 2017), foreign-born women in particular are more vulnerable to abuse because they are more likely to experience barriers to accessing formal support systems and less likely to leave an abused relationship due to fear of deportation, limited language proficiency and a lack of strong support networks (Marrs Fuchsel & Brummett, 2020). This social, legal and physical isolation can create mistrust of formal systems, resulting in barriers to health and social services (Jean-Baptiste et al., 2017).

Due to the trauma and barriers to broader service delivery IPV produces, it is particularly important to address IPV. The hope is that early visiting programmes can help disrupt IPV and some

research has been devoted to this issue. Two randomized controlled trials in the United States evaluated the effectiveness of the Nurse-Family Partnership (NFP) programme augmented with IPV components. However, neither trial showed a reduction in IPV or improvement in maternal quality of life (Feder et al., 2018; Jack et al., 2019). As a sensitive issue, women may often not disclose IPV experiences and providers can face discomfort and fear about IPV management, especially when victims are minority patients and perpetrators are around (Evans & Feder, 2016).

Despite its limited impacts, research still needs to address how heterogeneous are the impacts of these home visiting programmes on various vulnerable populations, including Latinx immigrant women. Federal home visiting programmes include a large share of Latinx mothers (e.g., 37%) (Duggan et al., 2018). A review of 10 articles on IPV programmes among immigrant Latinx populations did not identify studies on home visiting but report positive impacts of culturally specific, theoretically grounded and group-based programmes on depression, self-esteem and knowledge of wellness (Marrs Fuchsel & Brummett, 2020). Culturally tailored programmes included the use of Spanish language, cultural considerations and culturally relevant topics (e.g., gender roles, social isolation, immigration, religiosity, family and community unity, and access to legal protection) (Marrs Fuchsel & Brummett, 2020). Only one study protocol to date—on SafeCare<sup>®</sup>, an evidence-based parenting curriculum augmented with a healthy relationship curriculum—was designed to reduce IPV and child maltreatment for Latinx families (Fettes et al., 2020). However, the programme is still in the implementation phase and providers are not nurses (Fettes et al., 2020).

In this context, secondary analyses of prior trials focusing on Latinx women can be informative. Both the Feder and Jack trials included a high proportion of Latinx participants (50% and 46%, respectively). The Feder trial also integrates a primary prevention against IPV, namely, a relationship education curriculum called *Within My Reach* (Pearson et al., 2005).

Given these features, in this study, we used data from the Feder trial (Feder et al., 2018) to evaluate the effectiveness of the augmented NFP programme in preventing IPV among Latinx mothers, paying particular attention to differences by nativity. This trial assessed programme effects at 1- and 2-year follow-up. This longitudinal design allows us to track when the prevention programme started to show an effect and to understand how the effect changed over time.

## 1.1 | Theoretical framework

The theoretical framework guiding our analysis on Latinx nativity status and IPV integrates an intersectionality framework and an ecological model and is adapted from the work on IPV in Latin American women in Toronto (Godoy-Ruiz et al., 2015) and our prior work (Li et al., 2021), illustrated in Figure 1. Understanding foreign-born effects requires consideration of how it intersects with and mutually reinforces other forms of disadvantage (e.g., discrimination and response to IPV interventions) on the life course (Landale et al., 2017), for which both the intersectionality framework and an ecological model are helpful. The intersectionality framework posits that overlapping forms of oppression related to gender, race, ethnicity, nativity, immigration status and other social locations shape the experiences of individuals (Bowleg, 2012), including not only the IPV experiences of Latinx mothers but also their reports of IPV and responses to interventions against IPV. Relatedly, an ecological framework emphasizes contextual influences on individual behaviour and health (Guruge & Khanlou, 2004; Heise, 1998).

Therefore, we hypothesized that the life trajectories of US-born and foreign-born Latinx mothers could affect their responses to the home visiting programmes augmented with IPV prevention differently. Potential mechanisms are to shape their understanding of relationship commitment and their process to gain skills for future-oriented decisions (Figure 1). We assessed if the augmented programme reduced IPV among Latinx mothers by nativity. We also reviewed programme documents to learn how culturally tailored the augmented programme was compared with the standard programme.

## 2 | METHODS

### 2.1 | Design, sample, setting and randomization

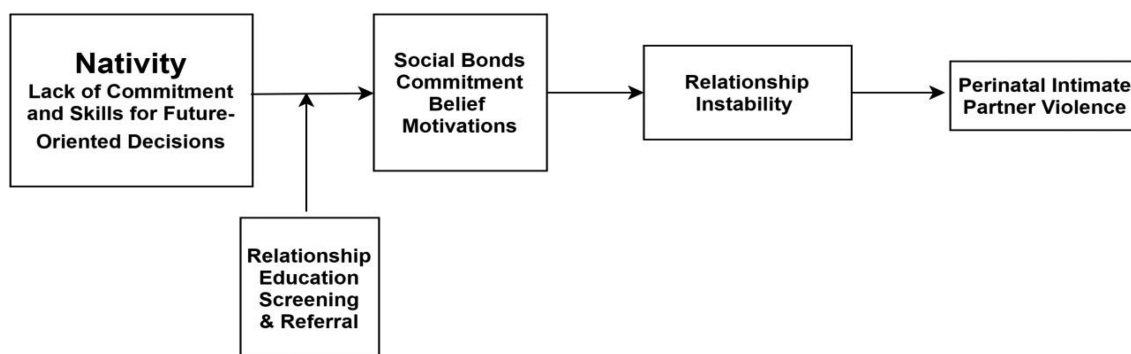
We performed secondary data analyses of Latinx mothers at three waves (baseline and 1- and 2-year follow-up) of a longitudinal randomized controlled trial (Feder et al., 2018; Nolon et al., 2009). Our study protocol (#Temp-2399) was not human subject research as determined by the Institutional Review Board of San Diego State University.

In the Feder trial (Feder et al., 2018), first-time, low-income mothers in Multnomah County, Oregon, were recruited from 2007 to 2009 and assigned at random to either the augmented or standard programme. All women contacted the NFP referral line, met the NFP programme criteria and spoke either English or Spanish. Of 238 women who completed the baseline survey, retention was 88% and 81% after 1- and 2-year follow-up. Among 119 mothers who identified themselves as Hispanic, 75 were in the augmented programme, 44 in the standard programme, 33 were US-born (13 in the standard programme and 20 in the augmented programme) and 86 were foreign-born (31 and 55, respectively). Non-Hispanic White mothers ( $n = 70$ ) were not included as a comparison.

### 2.2 | Intervention

As described in more detail by Feder et al. (2018), the IPV intervention included three components. First, a 15-unit primary prevention curriculum, *Within My Reach* (Pearson et al., 2005), focused on building and maintaining healthy and committed relationships (e.g., vision exercise, and sliding versus deciding) (Rhoades & Stanley, 2011) and skills-based activities on communication, decision making and conflict management to reduce the risk of IPV (Pearson et al., 2005). Second, structured verbal screening of IPV was conducted at regular intervals (Feder et al., 2018). Third, those reporting IPV were provided brochure-driven intervention and referral (McFarlane et al., 1992).

By the end of the trial, the IPV prevention programme was delivered by four English-speaking and two Spanish-speaking trained



**FIGURE 1** Maternal nativity in intersectionality framework with an ecological model in the mechanisms of change on how relationship education prevents intimate partner violence, adapted from a manuscript (Li et al., 2021)

nurses in the augmented programme, and eight and four respectively in the standard programme. Given an unanticipated increase in the number of Spanish-speaking clients consenting into the NFP programme, one additional Spanish-speaking nurse was added into two programmes. The Spanish-speaking nurses were matched with Latinx mothers with needs for Spanish. However, counts of Latinx nurses were unknown. Among measures in the survey, only the revised Campbell's Danger Assessment was translated and back-translated into Spanish with content validation by Spanish-speaking experts on IPV (Campbell et al., 2009).

### 2.3 | Measures

Mothers were interviewed at three waves (baseline and 1- and 2-year follow-up) by research assistants in-person or using Audio Computer-Assisted Self-Interview software on the laptop (65%) in an English or Spanish version (Feder et al., 2018).

The primary outcome was IPV, operationalized as the perpetration and victimization of physical and sexual violence in the past year, using the Revised Conflict Tactics Scale. This measure has high internal consistency within scales and good validity (Straus et al., 1996). This scale included subscales for physical assault (12 items) and sexual coercion (7 items). We summed physical and sexual victimization and/or perpetration to construct the total forms of reported IPV. Therefore, IPV was an ordinal outcome that ranged from 0 for no violence to 4 for all forms of violence. The absence of any form indicated a violence free status and was a binary variable.

Maternal nativity was based on the question: 'Were you born in the US?'

Maternal low education for age was operationalized on the basis of the highest level of education. Latinx mothers who are (1) at least 18 years old and do not have a general educational development test or high school diploma or (2) between 15 and 17 years old without high school education were therefore coded as having low education for age.

Relationship with the child's father was based on maternal choice: 'living separately, casually dating each other', 'living separately, dating each other exclusively', 'living together, dating each other, but also other people', 'living together, dating each other exclusively', 'engaged' or 'married'.

Relationship stability. When a woman confirmed a current romantic relationship with her child's father, she was asked for his first name. Relationship stability was a dummy variable operationalized as whether the same father was identified from pregnancy to 1-year follow-up or over three waves (i.e., yes or no).

Commitment. A committed relationship was operationalized as being married or engaged, which would be markers of psychological commitment between partners, such as dedication to the joint benefit of each partner and the future (Li et al., 2010; Rhoades et al., 2010), which has been shown in turn to be associated with lower tendency for aggression to a partner (Rhoades et al., 2010).

### 2.4 | Data analysis

All analyses were performed using SAS 9.4 (SAS Institute, Cary, NC). Descriptive statistics were calculated. Chi-squared tests and *t* tests for differences of proportions and means were used to examine the significance of univariate analyses between maternal characteristics and nativity status and of bivariate associations between maternal nativity status and IPV. Because IPV was coded as an ordinal variable across the three waves, we performed the proportional odds model of generalized estimating equations (Stokes et al., 2012) for IPV forms, which allows for the adjustment of standard errors to the clustering of observations within individuals. Generalized estimating equations were performed for a binary outcome of IPV free status. With these two approaches, we investigated the association between maternal nativity status and IPV, adjusting for the intervention status, wave, age and education. Due to our research questions and the longitudinal nature after the IPV prevention programme, three interaction terms (i.e., the moderation effect between intervention and nativity, the different intervention effects on waves and the different nativity effects on waves) were included in the models. We selected  $\alpha = .05$  as the level of significance.

## 3 | RESULTS

As shown in Table 1, at baseline, compared with US-born counterparts, foreign-born Latinx mothers were less likely to report IPV (24% vs. 65% and 42% vs. 69% in augmented and standard programmes, respectively,  $p < .05$ ) and report fewer forms of IPV (0.4 vs. 1.3 and 1.1 vs. 1.5 in augmented and standard programmes, respectively,  $p < .05$ ). More importantly, compared with their reports at baseline, US-born Latinx mothers in both standard and augmented programme as well as foreign-born mothers in the standard programme reported similar levels of IPV across waves, suggesting that neither standard nor augmented programmes were effective for these mothers. In contrast and unexpectedly, foreign-born Latinx mothers in the augmented programme increasingly reported *higher* rates of experiencing IPV (24%, 45% and 55%, comparisons  $p > .100$ ) and more forms of IPV across waves (0.4, 0.7 and 0.8, Wave 3 vs. Wave 1  $p = .012$ , other comparisons  $p > .100$ ). The ratio of the augmented/standard programme percentage of violence by nativity and wave shows more clearly that the programme was not effective for US-born women (0.94, 0.96 and 0.94). This indicator shows even worse outcomes by wave for foreign-born women (0.57, 1.15 and 1.15). Thus, the augmented programme either made violence worse for foreign-born women or, perhaps more likely, helped uncover more violence that already existed.

Our multivariable models, which control for important sociodemographic characteristics that differ somewhat by nativity and programme assigned, confirm these patterns. As shown in Table 2, after first fitting a model that allowed for the effect of the intervention to vary by wave and nativity, none of these were significant for either of two outcomes ( $p > .050$ ; for example  $p = 0.414$  and 0.953

**TABLE 1** Social demographics, relationship quality and intimate partner violence by nativity status among 119 Latinx mothers in a trial, Oregon, 2005 to 2011

Measures	US-born (n = 33)		Foreign-born (n = 86)		US- vs. foreign-born p value		
	Standard n = 13	Augmented n = 20	Standard n = 31	Augmented n = 55			
Any violence			A/S		A/S		
Baseline	69%	65%	0.94	42%	24%	0.57	.003*
1-year follow-up	62%	60%	0.96	39%	45%	1.15	.086**
2-year follow-up	69%	65%	0.94	48%	55%	1.15	.015*
Violence forms (0 to 4)							
Baseline	1.5 (1.3)	1.3 (1.2)	1.1 (1.4)	0.4 (0.7)			.008*
1-year follow-up	1.8 (1.9)	1.1 (1.2)	0.9 (1.4)	0.7 (1.0)			.235
2-year follow-up	1.3 (1.1)	0.9 (1.1)	1.0 (1.3)	0.8 (1.0)			.651
Age at the baseline	18.6 (3.8)	18.3 (4.5)	22.2 (5.3)	20.7 (3.8)			.002*
	15–27	15–36	15–34	15–29			
Education at the baseline							.002*
Elementary	0%	0%	10%	13%			
6–8th grade	0%	0%	19%	31%			
9–12th grade	62%	55%	32%	33%			
General educational development test	0%	15%	3%	0%			
High school graduate	38%	30%	32%	22%			
Low education for age	15%	20%	55%	60%			<.001*
Annual family income baseline							
<\$21,000	31%	45%	68%	62%			.023*
Missing	31%	40%	23%	25%			
Employed at the baseline	77%	70%	87%	90%			.037*
Relationship with child's father							
Baseline							.170
Missing	4 (31%)	2 (10%)	7 (23%)	12 (22%)			
Living separately, dating casually	0	0	0	1 (2%)			
Living separately, dating exclusively	4 (31%)	6 (30%)	3 (10%)	6 (11%)			
Living together, dating casually	0	0	0	0			
Living together, dating exclusively	2 (15%)	5 (25%)	7 (23%)	15 (27%)			
Engaged	1 (8%)	4 (20%)	3 (10%)	10 (18%)			
Married	2 (15%)	3 (15%)	11 (35%)	11 (20%)			
1-year follow-up							.029*
Missing	6 (46%)	6 (30%)	9 (29%)	16 (29%)			
Living separately, dating casually	2 (15%)	1 (5%)	0				
Living separately, dating exclusively	0	4 (20%)	1 (3%)	3 (5%)			
Living together, dating casually	0	0	0	2 (4%)			
Living together, dating exclusively	3 (23%)	4 (20%)	4 (13%)	14 (25%)			
Engaged	0	2 (10%)	4 (13%)	8 (15%)			
Married	2 (15%)	3 (15%)	13 (42%)	12 (22%)			
2-year follow-up							.396
Missing	6 (46%)	9 (45%)	11 (35%)	23 (22%)			
Living separately, dating casually	1 (8%)	0	0	1 (2%)			
Living separately, dating exclusively	0	3 (15%)	0	2 (4%)			

(Continues)

TABLE 1 (Continued)

Measures	US-born (n = 33)		Foreign-born (n = 86)		US- vs. foreign-born p value
	Standard n = 13	Augmented n = 20	Standard n = 31	Augmented n = 55	
Living together, dating casually	0	1 (5%)	0	1 (2%)	
Living together, dating exclusively	1 (8%)	2 (10%)	3 (10%)	8 (15%)	
Engaged	3 (23%)	2 (10%)	5 (16%)	6 (11%)	
Married	2 (15%)	3 (15%)	12 (39%)	14 (25%)	
Relationship stability					
Time 1 to Time 2	54%	60%	65%	60%	.876
Across 3 time points	38%	45%	52%	42%	.954

Note: At 1-year follow-up, 8 (7 in the augmented programme and 1 in the standard programme) foreign-born mothers and 4 (3 and 1) US-born mothers dropped out. At 2-year follow-up, 13 (11 and 2) foreign-born mothers and 5 (4 and 1) US-born mothers did. The major differences are bolded.

Abbreviation: A/S, the ratio of the augmented/standard percentage of violence by nativity and wave.

\* $p < .05$ . \*\* $p < .10$ .

TABLE 2 Multivariable analysis of maternal nativity status and intimate partner violence among 119 Latinx mothers in a trial, Oregon, 2005 to 2011

Outcome types	Intimate partner violence						
	Model 1 <sup>a</sup>			Model 2 <sup>b</sup>			
	Violence forms			Any violence			
	AOR	95% CI	p value	AOR	95% CI	p value	
Intervention-wave interaction			.414			.506	
Intervention-nativity interaction <sup>c</sup>			.953			.982	
Nativity-wave interaction							
Nativity effect at pregnancy	0.29	0.13–0.67	.004*	0.23	0.09–0.59	.002*	
Nativity effect at 1-year follow-up	0.43	0.17–1.08	.072**	0.55	0.23–1.34	.189	
Nativity effect at 2-year follow-up	0.75	0.33–1.67	.475	0.61	0.25–1.48	.273	
Augmented vs. standard programme before intervention	0.38	0.18–0.82	.013*	0.47	0.20–1.09	.080**	
Age	0.95	0.90–1.01	.095**	0.96	0.91–1.01	.112	
Low education for age	1.19	0.67–2.13	.553	1.19	0.65–2.19	.574	

Abbreviations: AOR, adjusted odds ratio, adjusting for intervention, wave, age and education; CI, confidence interval.

<sup>a</sup>Proportional odds model of generalized estimating equations.

<sup>b</sup>Generalized estimating equations.

<sup>c</sup>p values for the intervention-nativity interaction before being deleted from the models.

\* $p < .05$ . \*\* $p < 0$ .

for violence forms, respectively). This suggests that the lack of effectiveness of the augmented programme described before was similar for US-born and foreign-born mothers.

Note that augmented programme participants did report lower IPV before intervention. The adjusted odds ratio (AOR) of IPV forms of the augmented group was 0.38 compared with the standard group (0.38, 95% confidence interval: 0.18–0.82,  $p = .013$ ). However, given that the intervention-wave interaction was not significant ( $p = .414$ ), this coefficient reflects differences between groups that already existed at baseline, that is, *prior to* and thus not attributable to exposure to the augmented programme (Table 2).

Finally, we do find significant and potentially relevant nativity differences in IPV by wave (i.e., the nativity-wave interaction) (Table 2).

Foreign-born status was associated with significantly fewer IPV forms at baseline (0.29, 0.13–0.67,  $p = .004$ ). Such association was attenuated at 1-year follow-up (0.43, 0.17–1.08,  $p = .072$ ) and reduced further and was not significant at 2-year follow-up (0.75, 0.33–1.67,  $p = .475$ ). For a binary outcome of IPV free, generalized estimating equations did not detect the marginally significant nativity difference at 1-year follow-up or age effect (Table 2).

## 4 | DISCUSSION

Our secondary analyses of 119 Latinx mothers participating in the Feder trial (Feder et al., 2018) showed that neither the standard nor

augmented programme seemed to be effective in reducing the occurrence of IPV or IPV forms in its Latinx mothers' subsample with different outcomes by nativity. US-born Latinx mothers reported IPV at similar levels during the 2 years of the NFP. Despite the participation of Spanish-speaking trained nurses and the translation of programme materials to Spanish, the augmented programme could have missed some important cultural nuance that reduced its effectiveness among Latinx mothers. In contrast to the situation of US-born Latinx participants, Latinx immigrant mothers participating in the augmented programme reported *higher* levels of IPV after 2 years in the NFP. Given that, at baseline, foreign-born mothers (in both standard and augmented programme) reported lower levels of IPV, this unexpected result reduced the nativity gap in IPV in our multivariable models.

At least three reasons could explain the attenuated and lost advantage of foreign-born Latinx mothers on reported IPV and the diminished nativity gap. First, the augmented programme may be less effective among foreign-born mothers for various reasons (e.g., due to the programme not being sufficiently culturally tailored). As previously discussed, because we find no evidence that the programme was effective on reducing IPV on either group of women, we discard this possibility. Second, the augmented programme could have 'produced' more IPV if the strategies recommended to deescalate violence were not well received by partners (or well executed by mothers). Preventing this possibility requires the careful implementation of the augmented programme. Finally, third, and *perhaps* most likely, the programme could have been effective in uncovering already-existing IPV that had otherwise gone under-reported. That is, the survey instrument may have been less effective in capturing IPV among immigrant women at baseline due to a larger reporting bias among them (Waltermaurer et al., 2003). This reporting bias could have decreased (nonmonotonically) over time (see Table 1) due to the impacts of both nurse home visits and *especially* the augmented programme. In a sense, this would have been a benefit of the programme not only because it helped better detect an important problem but also because it could have helped empower participants to recognize the problem.

Insights from an intersectionality framework and an ecological model suggest that many foreign-born mothers experiencing IPV might not report it at baseline due to their vulnerability related to several factors, from gendered social control norms in the sending country and/or immigrant community to difficulties in navigating social and legal systems in the United States due to legal status, language and unfamiliarity (Raj & Silverman, 2002). The augmented programme could have thus helped these women become more willing or able to recognize the presence of IPV in their lives at 1- and 2-year follow-up. These two reasons could not be differentiated in this quantitative study. Future qualitative studies can better understand the reasoning and inform prevention. Future research also needs to understand the mechanisms, quantify inequalities that led to nativity differentiation in programme effects to IPV in Latinx mothers and identify strategies to eliminate them.

Culturally tailored programmes were not planned before this study. However, intervention materials were delivered in English or Spanish based on maternal preference. Nurses reported using cultural adaptations in their administration of the interventions informally, for

example, using the examples of Spanish *telenovelas* (soap operas) that women were watching to explain commitment concepts (P Niolon, personal communication, 17 May 2021). Future studies need to design culturally tailored curricula, which can sensitively address needs of both foreign-born and US-born Latinx mothers, detect and prevent IPV, and optimize resources for health equity.

#### 4.1 | Study strengths and limitations

This study has clear strengths, such as its experimental longitudinal design with a pre-intervention baseline measure and immediate intervention as well as two well-spaced assessments post-intervention. However, there are also some limitations. First, Latinx mothers were not an a priori subgroup of this randomized controlled trial. After randomization, Latinx mothers were unbalanced with 75 in the augmented programme and 44 in the standard programme. As such, some results could be underpowered and/or could not be generalizable to Latinx mothers in Multnomah County or other places. Second, annual family income and the first name of the child's father—used to ascertain IPV—had relatively high proportions missing, potentially biasing our results. Third, reporting bias could exist due to self-reports of sensitive IPV outcomes. Fourth, we could not control for whether mothers and nurse visitors were matched by race/ethnicity or language, which could have affected programme effectiveness.

### 5 | CONCLUSIONS

Our secondary analyses of a randomized controlled trial in Oregon showed that an early home visiting programme augmented with a curriculum aimed at reducing the occurrence of IPV was not effective in reducing such violence among Latinx women. These results were thus similar to those obtained for the full sample for this trial (Feder et al., 2018), which also included non-Latinx women. Despite these similarities, we find an important difference for foreign-born Latinx women, for whom the programme might have been effective but only in better detecting, not preventing or reducing IPV.

### 6 | IMPLICATIONS FOR NURSING MANAGEMENT

Detecting and addressing IPV remains a very important challenge for nursing leaders and managers. Interventions even via relatively intensive home visiting programmes have very limited effectiveness on IPV, including for Latinx women. Because IPV may also be particularly under-reported in Latinx immigrant populations, there is an added challenge to find better ways to detect IPV in addition to address it. Larger transdisciplinary studies including nursing leaders and managers are needed to better culturally tailor both IPV screening and relationship education curricula among Latinx populations. Nursing leaders and managers can promote even tighter service coordination,

a warm hand-off, and the linkage and follow-up in promoting evidence-based IPV interventions (West et al., 2021).

## ACKNOWLEDGEMENTS

We gratefully acknowledge the assistance from Drs Elias Provencio-Vasquez, Zhiying You, Phyllis Niolon and Jennifer Alvidrez; Ms Marcia Surratt from SAS; Liza Patrik, MS, RN, CNM and Mary Faltynski, RN, MPH, managers in two home visiting programmes in Boulder County, Colorado; and Robin Nelson, RN, a clinical supervisor for the augmented programme of the Nurse-Family Partnership programme with Multnomah County Health Department, Oregon. Financial support for undertaking the survey was provided by the National Center for Injury Prevention and Control (Grant U49CE000516 to PI Lynette Feder). Financial support for Fernando Riosmena was provided by University of Colorado Population Center and Eunice Kennedy Shriver National Institute of Child Health and Human Development (Grant P2CHD066613 PI: Lori Hunter). This study is a follow-up of a dissertation award from the National Center for Injury Prevention and Control (Grant R49CE000556 to PI Qing Li). It is originated from Kempe Summer Institute, University of Colorado Anschutz Medical Campus School of Medicine, with funding from Eunice Kennedy Shriver National Institute of Child Health and Human Development (Award Number R25HD094660 to PIs Desmond Runyan, John Fluke and Carol Runyan). This secondary analysis was completed as part of the Latino Health class requirements under the Latino Research and Policy Center (LRPC) from Colorado School of Public Health. Partial financial support is from University of Colorado School of Medicine, Anschutz Medical Campus, 2021 Slay Community Scholars.

## ETHICS STATEMENT

Our study protocol (#Temp-2399) was not human subject research as determined by the Institutional Review Board of San Diego State University.

## CONFLICT OF INTERESTS

None of the authors have conflicts of interest. No financial disclosures were reported.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the owner of the data, Lynette Feder. Restrictions apply to the availability of these data, which were used under licence for this study. Data are available from the authors Qing Li and Lynette Feder with the permission of the owner of the data, Lynette Feder.

## ORCID

Qing Li  <https://orcid.org/0000-0003-3060-3323>

Fernando Riosmena  <https://orcid.org/0000-0003-2865-6282>

Patricia A. Valverde  <https://orcid.org/0000-0002-4519-1213>

Shuo Zhou  <https://orcid.org/0000-0001-7514-3522>

Claudia Amura  <https://orcid.org/0000-0003-2825-2659>

Vincent J. Palusci  <https://orcid.org/0000-0001-8752-6475>

Lynette Feder  <https://orcid.org/0000-0002-2225-9940>

## REFERENCES

- 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. <https://doi.org/10.1016/j.amepre.2008.09.027>
- Bowleg, L. (2012). The problem with the phrase women and minorities: Intersectionality—an important theoretical framework for public health. *American Journal of Public Health*, 102(7), 1267–1273. <https://doi.org/10.2105/ajph.2012.300750>
- Campbell, J. C., Webster, D. W., & Glass, N. (2009). The danger assessment: Validation of a lethality risk assessment instrument for intimate partner femicide. *Journal of Interpersonal Violence*, 24(4), 653–674. <https://doi.org/10.1177/0886260508317180>
- Cianelli, R., Ferrer, L., & McElmurry, B. J. (2008). HIV prevention and low-income Chilean women: Machismo, marianismo and HIV misconceptions. *Culture, Health & Sexuality*, 10(3), 297–306. <https://doi.org/10.1080/13691050701861439>
- Condon, E. M. (2019). Maternal, infant, and early childhood home visiting: A call for a paradigm shift in states' approaches to funding. *Policy, Politics & Nursing Practice*, 20(1), 28–40. <https://doi.org/10.1177/1527154419829439>
- Duggan, A., Portilla, X. A., Filene, J. H., Crowne, S. S., Hill, C. J., Lee, H., & Knox, V. (2018). *Implementation of evidence-based early childhood home visiting: Results from the mother and infant home visiting program evaluation*. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health. <https://www.acf.hhs.gov/opre/report/implementation-evidence-based-early-childhood-home-visiting-results-mother-and-infant>
- Eckenrode, J., Ganzel, B., Henderson, C. R. Jr., Smith, E., Olds, D. L., Powers, J., Cole, R., Kitzman, H., & Sidora, K. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. *JAMA*, 284(11), 1385–1391. <https://doi.org/10.1001/jama.284.11.1385>
- Evans, M. A., & Feder, G. S. (2016). Help-seeking amongst women survivors of domestic violence: A qualitative study of pathways towards formal and informal support. *Health Expectations*, 19(1), 62–73. <https://doi.org/10.1111/hex.12330>
- Feder, L., Niolon, P. H., Campbell, J., Whitaker, D. J., Brown, J., Rostad, W., & Bacon, S. (2018). An intimate partner violence prevention intervention in a nurse home visitation program: A randomized clinical trial. *Journal of Women's Health (Larchmt)*, 27(12), 1482–1490. <https://doi.org/10.1089/jwh.2017.6599>
- Fettes, D. L., Aarons, G. A., Brew, V., Ledesma, K., & Silovsky, J. (2020). Implementation of a trauma-informed, evidence-informed intervention for Latinx families experiencing interpersonal violence and child maltreatment: Protocol for a pilot randomized control trial of SafeCare+<sup>®</sup>. *Pilot and Feasibility Studies*, 6, 153. <https://doi.org/10.1186/s40814-020-00681-3>
- Godoy-Ruiz, P., Toner, B., Mason, R., Vidal, C., & McKenzie, K. (2015). Intimate partner violence and depression among Latin American women in Toronto. *Journal of Immigrant and Minority Health*, 17(6), 1771–1780. <https://doi.org/10.1007/s10903-014-0145-1>
- Guruge, S., & Khanlou, N. (2004). Intersectionalities of influence: Researching the health of immigrant and refugee women. *Canadian Journal of Nursing Research*, 36(3), 32–47.
- Heise, L. L. (1998). Violence against women: An integrated, ecological framework. *Violence Against Women*, 4(3), 262–290. <https://doi.org/10.1177/1077801298004003002>
- Jack, S. M., Boyle, M., McKee, C., Ford-Gilboe, M., Wathen, C. N., Scribano, P., Davidov, D., McNaughton, D., O'Brien, R., Johnston, C., Gasbarro, M., Tanaka, M., Kimber, M., Coben, J., Olds, D. L., & MacMillan, H. L. (2019). Effect of addition of an intimate partner violence intervention to a nurse home visitation program on maternal quality of life: A randomized clinical trial. *JAMA*, 321(16), 1576–1585. <https://doi.org/10.1001/jama.2019.3211>



- Jean-Baptiste, E., Alitz, P., Birriel, P. C., Davis, S., Ramakrishnan, R., Olson, L., & Marshall, J. (2017). Immigrant health through the lens of home visitors, supervisors, and administrators: The Florida Maternal, Infant, and Early Childhood Home Visiting program. *Public Health Nursing, 34*(6), 531–540. <https://doi.org/10.1111/phn.12315>
- Kitzman, H., Olds, D. L., Henderson, C. R. Jr., Hanks, C., Cole, R., Tatelbaum, R., McConnochie, K. M., Sidora, K., Luckey, D. W., Shaver, D., Engelhardt, K., James, D., & Barnard, K. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing. A randomized controlled trial. *JAMA, 278*(8), 644–652. <https://doi.org/10.1001/jama.1997.03550080054039>
- Klevens, J. (2007). An overview of intimate partner violence among Latinos. *Violence Against Women, 13*(2), 111–122. <https://doi.org/10.1177/1077801206296979>
- Lachance, C., Matoff-Stepp, S., Segebrecht, J., & Mautone-Smith, N. (2020). Galvanizing an agency-wide approach: The HRSA strategy to address intimate partner violence. *Public Health Reports, 135*(1), 11–15. <https://doi.org/10.1177/0033354919884305>
- Landale, N. S., Oropesa, R. S., & Noah, A. J. (2017). Experiencing discrimination in Los Angeles: Latinos at the intersection of legal status and socioeconomic status. *Social Science Research, 67*, 34–48. <https://doi.org/10.1016/j.ssresearch.2017.05.003>
- Li, Q., Kirby, R. S., Sigler, R. T., Hwang, S. S., Lagory, M. E., & Goldenberg, R. L. (2010). A multilevel analysis of individual, household, and neighborhood correlates of intimate partner violence among low-income pregnant women in Jefferson County, Alabama. *American Journal of Public Health, 100*(3), 531–539. <https://doi.org/10.2105/ajph.2008.151159>
- Li, Q., Provencio-Vasquez, E., Campbell, J., Palusci, V., You, Z., Hovell, M., & Feder, L. (2021). Preventing perinatal teen dating violence through relationship education at nurse home visiting: Secondary analyses of a randomized controlled trial [paper presentation]. American Public Health Association. <https://apha.confex.com/apha/2021/meetingapp.cgi/Person/1985352>
- Mancera, B. M., Dorgo, S., & Provencio-Vasquez, E. (2017). Risk factors for Hispanic male intimate partner violence perpetration. *American Journal of Men's Health, 11*(4), 969–983. <https://doi.org/10.1177/1557988315579196>
- Marrs Fuchsel, C. L., & Brummett, A. (2020). Intimate partner violence prevention and intervention group-format programs for immigrant Latinas: A systematic review. *Journal of Family Violence, 1-13*, 1–13. <https://doi.org/10.1007/s10896-020-00160-6>
- Maternal and Child Health Bureau. (2020). Maternal child health initiatives: Overview of the maternal, infant, and early childhood home visiting program. <https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting-overview>
- McFarlane, J., Parker, B., Soeken, K., & Bullock, L. (1992). Assessing for abuse during pregnancy. Severity and frequency of injuries and associated entry into prenatal care. *JAMA, 267*(23), 3176–3178. <https://doi.org/10.1001/jama.267.23.3176>
- Niolon, P. H., Whitaker, D. J., Feder, L., Campbell, J., Wallinder, J., Self-Brown, S., & Chivers, S. (2009). A multicomponent intervention to prevent partner violence within an existing service intervention. *Professional Psychology: Research and Practice, 40*(3), 264–271. <https://doi.org/10.1037/a0013422>
- Olds, D. L., Eckenrode, J., Henderson, C. R. Jr., Kitzman, H., Powers, J., Cole, R., Sidora, K., Morris, P., Pettitt, L. M., & Luckey, D. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial. *JAMA, 278*(8), 637–643. <https://doi.org/10.1001/jama.1997.03550080047038>
- Pearson, M., Stanley, S. M., & Kline, G. H. (2005). *Within My Reach leader manual*. PREP for Individuals, Inc.
- Raj, A., & Silverman, J. (2002). Violence against immigrant women: The roles of culture, context, and legal immigrant status on intimate partner violence. *Violence Against Women, 8*(3), 367–398. <https://doi.org/10.1177/10778010222183107>
- Rhoades, G. K., & Stanley, S. M. (2011). Using individual-oriented relationship education to prevent family violence. *Journal of Couple & Relationship Therapy, 10*(2), 185–200. <https://doi.org/10.1080/15332691.2011.562844>
- Rhoades, G. K., Stanley, S. M., Kelmer, G., & Markman, H. J. (2010). Physical aggression in unmarried relationships: The roles of commitment and constraints. *Journal of Family Psychology, 24*(6), 678–687. <https://doi.org/10.1037/a0021475>
- Sharps, P. W., Campbell, J., Baty, M. L., Walker, K. S., & Bair-Merritt, M. H. (2008). Current evidence on perinatal home visiting and intimate partner violence. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 37*(4), 480–491. <https://doi.org/10.1111/j.1552-6909.2008.00267.x>
- Stokes, M. E., Davis, C. S., & Koch, G. G. (2012). *Categorical data analysis using SAS®* (3rd ed.). SAS Institute Inc.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S. U. E., & Sugarman, D. B. (1996). The revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues, 17*(3), 283–316. <https://doi.org/10.1177/019251396017003001>
- Waltermauer, E. M., Ortega, C. A., & McNutt, L. A. (2003). Issues in estimating the prevalence of intimate partner violence: Assessing the impact of abuse status on participation bias. *Journal of Interpersonal Violence, 18*(9), 959–974. <https://doi.org/10.1177/0886260503255283>
- West, A., Duggan, A., Gruss, K., & Minkovitz, C. (2021). Service coordination to address maternal mental health, partner violence, and substance use: Findings from a national survey of home visiting programs. *Prevention Science, 22*(5), 633–644. <https://doi.org/10.1007/s11212-021-01232-9>

**How to cite this article:** Li, Q., Riosmena, F., Valverde, P. A., Zhou, S., Amura, C., Peterson, K. A., Palusci, V. J., & Feder, L. (2022). Preventing intimate partner violence among foreign-born Latinx mothers through relationship education during nurse home visiting. *Journal of Nursing Management, 30*(6), 1639–1647. <https://doi.org/10.1111/jonm.13565>