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Intimate Partner Violence Before and During Pregnancy: Related Demographic and Psychosocial Factors and Postpartum Depressive Symptoms among Mexican American Women

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Abstract

Although research examining intimate partner violence (IPV) has expanded in recent years, there has been relatively little examination of the related demographic and psychosocial factors, as well as mental health outcomes, for IPV *before* and *during* pregnancy, especially in a Mexican American population. The current study provides a snapshot of the occurrence of IPV in a community sample of low-income, perinatal Mexican American women ($n = 320$). Results indicated that 13.1% of the women reported IPV *before* pregnancy and 11.3% reported IPV *during* pregnancy. For both IPV *before* and *during* pregnancy, women born in the U.S. were more likely to report IPV than foreign born women. For IPV *before* pregnancy, women who were not in a serious romantic relationship or reported a history of childhood trauma were also more likely to report IPV. For IPV *during* pregnancy, women who reported higher general stress and lower social support were also more likely to report IPV. Finally, the current study provided strong evidence that a history of IPV predicted elevated postpartum depressive symptoms, above and beyond the impact of prenatal depressive symptoms. This study brings greater awareness to a complex and harmful situation in an understudied population. Results are discussed in terms of the relation between demographic and psychosocial risk for IPV before and during pregnancy, acculturation, and postpartum depressive symptoms, as well as the implications for the development of future prevention and intervention programs.

Keywords

interpersonal violence; pregnancy; Latinas; postpartum depression

Intimate partner violence (IPV) is a widespread, prevalent, and serious public health issue. Definitions of IPV include physical, sexual, emotional, and/or psychological abuse and threats of harm (Centers for Disease Control and Prevention; CDC, 2009), as well as

financial abuse, controlling behavior, and coercion between current and former spouses and dating partners (Stark, 2007). Estimates suggest that approximately 1.5 million women in the United States (U.S.) experience IPV every year, with one in four women experiencing violence from a male partner at some point during her life (Tjaden & Thoennes, 2000). In 2007, IPV was linked to 2,340 deaths in the U.S. (CDC, 2009).

Although research examining IPV has expanded in recent years, there has been little examination of demographic and psychosocial factors related to IPV *before* pregnancy and IPV *during* pregnancy, particularly in Mexican American women. Additionally, few studies have examined the relation between a history of IPV and postpartum depressive symptoms in a community sample of Mexican American women. The aims of the present study were to 1) examine the prevalence and descriptive characteristics of IPV both *before* and *during* pregnancy, 2) investigate the relation between demographic, general psychosocial factors, and culture-specific psychosocial factors and IPV *before* and *during* pregnancy, and 3) examine the relation between a history of IPV and postpartum depressive symptoms.

IPV Before and During Pregnancy

Although IPV occurring at any time in a person's life can be disturbing and destructive, IPV during pregnancy presents a particularly unique concern because both the woman and her unborn child are negatively affected (Martin, Harris-Britt, Li, Moracco, Kupper, & Campbell, 2004). In the U.S., prevalence rates of IPV during pregnancy in general population samples have been reported to be 0.9-20.1%, with most studies finding a range between 3.9 and 8.3% (Peterson et al., 1997). The current study focuses on IPV among Latinas, the largest minority group in the U.S., and specifically on women of Mexican origin that represent the largest subgroup [63.0%; U.S. Census Bureau, 2011]. Previous research has reported the prevalence of IPV *during* pregnancy among Latinas in the U.S. to be 6.2%-19.0% (Martin & Garcia, 2011; Mattson & Rodriguez, 1999; Yost, Bloom, McIntire, Donald, & Leveno, 2005).

In comparing prevalence rates of IPV before and during pregnancy, results are mixed. In a large sample of pregnant women in Mexico, Castro, Peek-Asa and Ruiz (2003) found no significant difference in rates of IPV before and during pregnancy (24.4% of the sample reported any type of IPV [physical, emotional, or sexual] before pregnancy and 24.5% reported any type of IPV during pregnancy). Others have found small declines in rates of IPV with pregnancy onset. For example, Martin and Garcia (2011) found that rates of physical IPV and emotional IPV decreased with pregnancy onset (11% to 10% and 22% to 19%, respectively) in Latina women living in Los Angeles, California.

IPV and Related Demographic and Psychosocial Factors

Demographic and general psychosocial risk factors for IPV in general population samples include lower socioeconomic status, lower education levels, and unemployment (Capaldi, Knoble, Shortt, & Kim, 2012; CDC, 2009; Martin et al., 2004; Martin, Mackie, Kupper, Buescher, & Moracco, 2001; Taylor & Nabors, 2009). Each of these factors is more prevalent in Mexican Americans as compared to Anglos, suggesting that Mexican Americans are at elevated risk of IPV (U.S. Census Bureau, 2003). In addition, younger age,

a history of childhood trauma, lower levels of social support, and higher levels of stress have been linked to higher levels of IPV (Capaldi, et al., 2012; Castro, et al., 2003; Martin et al., 2004; Martin & Garcia, 2011; Taylor & Nabors, 2009). Finally, reports of IPV are higher for women who are not married or in a serious romantic relationship (Martin & Garcia, 2011).

Although IPV during pregnancy may be significantly different than IPV occurring at other times, few studies examine differential correlates of IPV *before* and *during* pregnancy (Burch & Gallup, 2004). Of those that have, demographic factors (race, education level, age, poverty status) predicted higher risk of IPV *before* and *during* pregnancy similarly in general population samples (Burch & Gallup, 2004; Martin et al., 2001). No known studies have examined psychosocial factors associated with IPV *before* pregnancy and IPV *during* pregnancy in a community sample of Mexican American women.

Cultural Factors and IPV

Because immigrants face many challenges as they try to adjust to life in a new country, such as language barriers, discrimination, immigration concerns, and obtaining quality employment, education, and healthcare, previous research has posited that Latino immigrants may experience worse mental health outcomes, as compared to U.S. born Latinos. Contrary to hypotheses, Latino immigrants typically exhibit similar, or even better, mental health outcomes than non-U.S. born Latinos (Burnam, Hough, Karno, & Escobar, 1987; Ortega, Rosenheck, Alegria, & Desai, 2000). Known as the “immigrant paradox,” it has been theorized that maintenance of cultural traditions promotes better mental health by minimizing exposure to stressors associated with acculturation to new cultural norms and expectations (Cuevas, Sabina, & Bell, 2012). Building on prior work, research has begun to examine how relevant cultural factors relate to IPV in Mexican (foreign-born) and Mexican American (U.S. born) women. One of these factors, acculturation, is defined as the process of adaptation that occurs when culturally distinct groups or individuals of a society come into contact with another culture (Berry & Kim, 1988). The process may include the gradual incorporation of language, beliefs, values, and behaviors of the dominant society. Previous studies have approached the measurement of acculturation in various ways, including assessments of country of birth, language preference, cultural values, Anglo and Mexican orientation, and cultural stress (Gonzales, Knight, Morgan-Lopez, Saenz, & Siroli, 2002).

The evidence linking acculturation and IPV is mixed. For example, Jasinski (1998) found that U.S. born Mexican American and Puerto Rican American husbands were three times more likely to assault their wives than foreign-born husbands. Caetano and colleagues (2007) found significant positive relations between acculturation (measured with a multidimensional scale that assessed language preference, peer associations, and cultural values), cultural stress, and IPV (Caetano, Ramisetty-Mikler, Caetano Vaeth, & Harris, 2007). In contrast, Kaufman Kantor, Jasinski, and Aldarondo (1994) found no relation between English language preference and IPV, but they did find higher rates of IPV when the romantic partner was born in the U.S. Ramirez (2007) also found no relation between acculturation (measured with a combination of birthplace, country of residence, citizenship, and language preference) and IPV in Mexican American college students. One explanation for these inconsistent findings may be related to inconsistencies in the measurement of

acculturation, including studies that combine multiple indicators, including demographic markers (e.g., place of birth, years in the U.S.) that do not directly capture dimensions of culture change associated with acculturation (e.g., language, values, behaviors). It is possible, for example, to live in the U.S. for several years without experiencing significant change on these dimensions. Given the conflicting results, further research that disentangles distinct cultural variables linked to acculturation may shed light on any potential relation between culture-specific factors, acculturation, and IPV in Mexican American women. The current study examines demographic variables (country of birth, spouse/partner country of birth, age of immigration, years living in the U.S.), dimensions of cultural orientation (language preference, Anglo and Mexican orientation) and cultural stress as independent predictors of IPV.

IPV and Postpartum Depressive Symptoms

Postpartum depressive symptoms are one of the most common mental health problems associated with a history of IPV in the general population (Beydoun, Beydoun, Kaufman, Lo, & Zonderman, 2012). Independent of a history of IPV, the prevalence of postpartum depressive symptoms among Latina women living in the U.S. is estimated to be between 42.6% and 59.0% (Heilmann, Frutos, Lee, & Kury, 2004; Kuo, Wilson, Holman, Fuentes-Afflick, O'Sullivan, & Minkoff, 2004; Martinez-Schallmoser, Telleen, & Macmullen, 2003; Valentine, Rodriguez, Lapeyrouse, & Zhang, 2011). Although a great deal has been learned about the relation between a history of IPV and postpartum depressive symptoms in the general population, few studies have examined the relation in a community sample of Mexican American women. Rodríguez, and colleagues (2010) found that lifetime IPV-exposed Latinas reported significantly more postpartum depression than non-IPV-exposed Latinas (Rodríguez, Valentine, Ahmed, Eisenman, Sumner, Heilemann, & Liu, 2010). However, this study did not control for reports of prenatal depression in the prediction of postpartum depression. Valentine and colleagues (2011) found that recent IPV exposure (IPV defined using three questions and within the preceding 12 months) was significantly related to postpartum depression among U.S. Latinas in a general clinic population living in Los Angeles, California. Based on the limited studies examining the relation between a history of IPV and postpartum depressive symptoms in Mexican American women, additional research with a more comprehensive measure of IPV may increase our understanding of the role of a history of IPV in postpartum mental health.

Present Study

The current study examines demographic and psychosocial correlates of IPV *before* and *during* pregnancy, as well as the relation between a history of IPV and postpartum depressive symptoms in a unique, a low-income, community sample of Mexican American pregnant women. It was hypothesized that this sample would have higher rates of IPV both *before* pregnancy and *during* pregnancy than found in studies with general population samples due to the multiple risk factors for IPV that are more prevalent in Mexican Americans as compared to Anglos. It was also hypothesized that multiple demographic and general psychosocial correlates of IPV *before* pregnancy and *during* pregnancy would be evident, including a history of childhood trauma, not being in a serious romantic

relationship, lower social support, and higher stress. Due to the low-income nature of the sample, restricted variability may limit the prediction of lower socioeconomic status, lower education levels, and unemployment to IPV. Due to the limited and mixed results found in previous research, the relation between culturally-linked psychosocial factors and IPV was regarded as exploratory. It was further hypothesized that a history of IPV would predict elevated postpartum depressive symptoms, even after controlling for prenatal depressive symptoms.

Method

Participants

Data were collected as part of a larger study of postpartum adjustment among a community sample of 324 low-income Mexican Americans women. Eligibility criteria included the participant's 1) age of 18 or older, 2) Spanish or English fluency, 3) self-identification as Mexican or Mexican American, and 4) low-income status (income eligibility for Medicaid, or self-reported family income below \$25,000). Four participants' romantic partners were present during the prenatal interview, therefore these participants were not administered items regarding IPV (total study $n = 320$). A 15 week postpartum interview was completed by 300 (93.8%) of the participants. See Table 1 for demographic information. Approval to conduct this study was obtained from the Arizona State University Institutional Review Board (IRB) and the Maricopa Integrated Health System IRB. Data collection procedures were compliant with IRB provisions and standards.

Measures

Demographics—Participants provided information regarding their country of birth (1= U.S. born, 2 = foreign born), language preference for interview (1= English, 2 = Spanish), educational background, current marital status (1 = married/living together, 2 = single/separated/divorced), employment status (1 = employed full or part-time, 2 = not employed), age, and income (1 = <\$15,001, 2 = \$15,001-30,000, 3 = greater than \$30,000), and their spouse/dating partner's country of birth (1= U.S. born, 2 = foreign born). Women born outside of the U.S. provided the number of years they lived in the U.S. and the age at which they moved to the U.S.

IPV—Participants responded to 14 items from the Pregnancy Risk Assessment Monitoring System (PRAMS; CDC, 2004) regarding experiences with physical abuse (four items), sexual abuse (two items), and emotional abuse (eight items) perpetrated by their current or former romantic partner. Seven items addressed IPV *before* pregnancy and seven identical items addressed IPV *during* pregnancy (Cronbach's $\alpha = 0.86$ for the year prior to pregnancy; $\alpha = 0.85$ during pregnancy). Example items include “In the year before you became pregnant, did your boyfriend or husband at the time push, hit, slap, kick, choke, or physically hurt you in any other way?” and “Since you became pregnant, did your husband or boyfriend force you to take part in any sexual activity when you did not want to (including touch that made you uncomfortable). Scores were summed separately for IPV *before* pregnancy and *during* pregnancy.

Childhood Trauma—Ten items from the Emotional Abuse, Sexual Abuse, and Physical Abuse subscales from the Childhood Trauma Questionnaire short-form (Bernstein & Fink, 1998; current study $\alpha = 0.92$) were used to assess childhood trauma before the age of 18 years old. Scores were summed to create a total childhood trauma score.

Perceived Stress—The 4-item revised Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983; Gonzales Ramirez & Landero Hernandez, 2007; current study $\alpha = 0.65$) assessed the degree of stress a person perceived in the past month using a zero (*Never*) to four (*Very Often*) scale. Items were summed to create a total score. Higher scores reflect higher perceived stress. The PSS is available in Spanish and has established reliability and validity in pregnant and postpartum Hispanic women (Zambrana, Scrimshaw, Collins, & Dunkel-Schetter, 1997).

Economic Hardship—The 20-item Economic Hardship Scale (Barrera, Caples, & Tein, 2001; current study $\alpha = 0.59$) assessed financial strain, inability to make ends meet, not having enough money for necessities, and economic adjustments in the past three months using a one (*Almost Never or Never*) to five (*Almost Always or Always*) scale. Scores were summed across the subscales, standardized, and then summed to create a total economic hardship score.

Cultural Stress—The Immigration, Discrimination, and Language subscales of the Hispanic-Stress Inventory (HSI; Cervantes, Padilla, & Salgado de Snyder, 1991; current study $\alpha = 0.73$) assessed culture-specific stressors in the past three months. These subscales examine stress that may arise due to difficulty speaking English, being accepted by those outside of the Hispanic culture, and factors related to immigration status. Participants answered 16 questions using a five point scale (*Not at all Stressed* to *Extremely Stressed*). The items were summed to create a total score, with higher scores indicating higher cultural stress.

Social Support—The 17-item Medical Outcome Study Social Support scale (Sherbourne & Stewart, 1991; current study $\alpha = 0.96$) assessed participant's current emotional/informational, tangible, affectionate, and positive social support using a one (*Never*) to five (*All of the Time*) scale. Items were summed to create a total score. Higher scores reflect greater social support.

Anglo and Mexican Orientation—Women responded to the 30-item Acculturation Rating Scale for Mexican Americans II (ARSMA II; Cuéllar, Arnold, & Maldonado, 1995). The ARSMA-II assesses current assimilation and integration through two sub-scales, the Mexican Orientation Scale and the Anglo Orientation Scale. Questions required a yes or no response. Items were summed to create a total Mexican orientation score ($\alpha = 0.86$) and an Anglo orientation score ($\alpha = 0.93$). Higher scores reflect higher Mexican and Anglo orientation.

Depressive Symptoms—Maternal depressive symptoms were measured prenatally ($\alpha = 0.86$) and at 15 weeks postpartum ($\alpha = 0.85$) with the 10-item Edinburgh Postnatal Depressive Symptoms Scale (EPDS; Cox, Holden, & Sagovsky, 1987). The EPDS has good

reliability (Boyd, Le, & Somberg, 2005) and has been validated in Spanish-speaking samples (Beck & Gable, 2005). Questions assessed depressive symptoms over the past week using a zero (*Not at all, Never*) to three (*As much as you always do, Most of the time*) scale. Item scores were summed, with higher scores indicating higher depressive symptoms.

Procedure

Prospective participants were identified at two county-operated prenatal care clinics in Maricopa County, Arizona. In this region, approximately 30% of the population is Hispanic (U.S. Census Bureau, 2013). Eligible pregnant women were invited to participate by a female, bilingual interviewer. Informed consent and prenatal data were obtained between gestational weeks 23-39 ($M = 35.37$, $SD = 2.50$) in the participants' homes. Whenever possible, women were interviewed in a private room. Postnatal data were collected over the telephone at 15 weeks postpartum. To accommodate literacy concerns, structured interviews were administered verbally by female interviewers in the participant's language of choice. Participants held visual aids with verbal and graphic descriptions of item response formats. Participants were paid \$50 for the prenatal interview and \$10 for the 15 week postpartum interview.

Results

Data Analyses

Three sets of analyses were performed. First, the prevalence of IPV *before* and *during* pregnancy was evaluated. Second, multivariate analyses were performed to examine related demographic and psychosocial factors of IPV *before* and *during* pregnancy. Third, regression analyses were conducted to predict postpartum depressive symptoms from IPV, controlling for prenatal depressive symptoms.

Prevalence of Pregnancy-Related IPV

Of the 320 participants, 15.9% ($n = 51$) reported IPV before pregnancy *and/or* during pregnancy. A total of 13.1% ($n = 42$) of the participants reported IPV *before* pregnancy, with 5.9% ($n = 19$) reporting physical abuse, 12.2% ($n = 39$) emotional abuse, and 1.9% ($n = 6$) sexual abuse. Among women reporting IPV *before* pregnancy, the average number of items endorsed was 2.67 ($SD = 1.82$). A total of 11.3% ($n = 36$) of the participants reported experiencing IPV *during* pregnancy, with 3.4% ($n = 11$) reporting physical abuse, 10.9% ($n = 35$) emotional abuse, and 1.5% ($n = 5$) sexual abuse. Among women reporting IPV *during* pregnancy, the average number of items endorsed was 2.42 ($SD = 1.86$). IPV *before* pregnancy and IPV *during* pregnancy were significantly positively correlated ($r = 0.55$). Finally, 8.4% ($n = 27$) of the participants reported IPV both *before* pregnancy and *during* pregnancy.

For women who reported IPV at both time points, there was not a statistically significant difference in mean IPV scores across time (IPV *before* pregnancy $M = 2.85$, $SD = 1.81$, IPV *during* pregnancy $M = 2.52$, $SD = 1.97$; $t(26) = 1.16$, $p > .05$). When separated based on physical abuse, emotional abuse, and sexual abuse, each form of abuse was statistically and significantly correlated across time (r 's ranging from 0.40-0.72). No statistically significant

differences were noted in the prevalence of physical, emotional, or sexual abuse across time (physical abuse *before* pregnancy $M = 0.70$, $SD = 0.95$, *during* pregnancy $M = 0.56$, $SD = 0.89$; emotional abuse *before* pregnancy $M = 2.00$, $SD = 1.11$, *during* pregnancy $M = 1.81$, $SD = 1.11$; sexual abuse *before* pregnancy $M = 0.15$, $SD = 0.36$, *during* pregnancy $M = 0.15$, $SD = 0.36$; all p 's $< .05$).

Demographic and Psychosocial Correlates of IPV

Tables 2 and 3 display correlations among IPV, demographic characteristics, and psychosocial factors. IPV *before* and *during* pregnancy were higher in single/separated/divorced women, and U.S. born women, and were positively correlated with prenatal depressive symptoms, childhood trauma, perceived stress, and economic hardship, and negatively correlated with social support. IPV *before* pregnancy was positively correlated with cultural stress, and IPV *during* pregnancy was positively correlated with Anglo orientation.

Multivariate Analyses

Using variables that were found to be statistically significant in correlation analyses, two multivariate hierarchical linear regression analyses were conducted: one examined IPV *before* pregnancy and one examined IPV *during* pregnancy. To address multicollinearity, a total general stress score was created by combining the standardized perceived stress and economic hardship scores. At Step 1, demographic factors were entered, and at Step 2, general and culturally-linked psychosocial factors were entered (results shown in Table 4).

For IPV *before* pregnancy, results indicated that women who were born in the U.S., not married or living with their significant other, or reported childhood trauma were more likely to report IPV *before* pregnancy. IPV *during* pregnancy was higher among women who were born in the U.S., reported higher levels of general stress, or reported lower social support.

Relation between a History of IPV and Postpartum Depressive Symptoms

A linear regression analysis was conducted to examine the relation between IPV and postpartum depressive symptoms. To establish a more complete antenatal measure, IPV *before* pregnancy and IPV *during* pregnancy scores were summed to create a total IPV score. A history of IPV was significantly and positively related to depressive symptoms at 15 weeks postpartum ($R^2 = 0.19$, $F(2, 299) = 35.82$, $p < .001$), even after controlling for prenatal depressive symptoms.

Discussion

This study investigated IPV *before* and *during* pregnancy, including its prevalence, demography, related psychosocial factors, related culturally-linked psychosocial factors, and connection with postpartum depressive symptoms in a sample of low-income, Mexican-American women, a high-risk population that has been significantly underrepresented in the literature. In our sample, 13.1% of the women reported IPV *before* pregnancy and 11.3% reported IPV *during* pregnancy, prevalence rates consistent with prior estimates of IPV experienced by Latinas during the perinatal period (e.g., Martin & Garcia, 2011; Mattson &

Rodriguez, 1999; Yost, et al., 2005). Consistent with hypotheses, the rates of IPV both *before* pregnancy and *during* pregnancy were higher than found in studies with general population samples (3.9-8.3%; Peterson et al., 1997). No differences were found in the rates of emotional, physical, or sexual abuse across time, but there was a trend for rates of physical and emotional abuse to decrease with pregnancy onset. In general, our results are consistent with prior research indicating that women who reported IPV during pregnancy also reported IPV in the year prior to pregnancy (Martin, et al., 2004; Martin & Garcia, 2011; Taylor & Nabors, 2009).

For both IPV *before* and *during* pregnancy, women born in the U.S. were more likely to report IPV. Surprisingly, other acculturation variables were unrelated to IPV *before* or *during* pregnancy after accounting for country of birth, marital status, and general stress. Although cultural stress and Anglo orientation were correlated with IPV *before* pregnancy and IPV *during* pregnancy respectively, when examining multiple demographic and psychosocial factors simultaneously, these two factors may not be as salient as other factors.

Multivariate analyses indicated different patterns of correlates for IPV *before* and *during* pregnancy. Women who were single, separated, or divorced were more likely to report IPV *before* pregnancy, a finding consistent with previous research (Martin & Garcia, 2011). Ruiz-Pérez, Mata-Pariente, & Plazaola-Castaño (2006) reported that a majority of abused women (68%) in their sample of 400 Spanish women attempted to actively resolve the abusive situation through separation from their romantic partner, which may explain higher reports of IPV for women who are not in a romantic relationship. Women who reported childhood trauma were also more likely to report higher levels of IPV *before* pregnancy. Compatible with theories of the intergenerational transmission of violence, the relation between childhood trauma and IPV in adulthood has been a consistent finding over the past two decades (Capaldi, et al., 2012; Castro, et al., 2003). However, further research is required to understand the causal pathways linking childhood trauma to adult IPV (Castro, et al., 2003). Also consistent with previous research, women who reported higher general stress or lower social support were more likely to report IPV *during* pregnancy (Capaldi, et al., 2012). These findings are congruent with previous research showing that abusive partners often aim to isolate the victim from family and friends, making it difficult to leave the abusive situation (Cummings, Gonzalez-Guara, & Sandoval, 2013).

Our results may have implications about factors that are more or less salient during pregnancy, and bring attention to the notion of pregnancy-specific stressors. For example, it has been suggested that the increased risk for IPV *before* pregnancy for women who are not married or not in a serious romantic relationship may be associated with unintended pregnancies (Cripe Sanchez, Perales, Lam, Garcia, & Williams, 2008). Moreover, when examining multiple correlates, some factors, such as a history of childhood trauma, may not be as salient during pregnancy when evaluated in conjunction with other factors, such as increased stress or lack of social support.

Consistent with previous research, our results further suggest an elevated risk of postpartum depressive symptoms for women reporting a history of IPV. Our results extend prior risk models to demonstrate that postpartum depressive symptoms were associated with a history

of IPV over and above the influence of prenatal depressive symptoms in Mexican American women. The strong relation between IPV and postpartum depressive symptoms has significant implications for subsequent chronic depression, psychological distress, and difficulties with parenting (Coker et al., 2002; Kan, Feinberg, & Solmeyer, 2012). Postpartum depressive symptoms may be an important pathway through which IPV affects children, making it crucial to bring greater awareness and support to women experiencing IPV.

Given potential adverse consequences of postpartum depression for mothers and infants, IPV prevention and intervention programs could provide an opportunity for reducing the risk of postpartum depressive symptoms. Moreover, screening for IPV during prenatal visits can assist in the identification of patients with a history of IPV who may be at a higher risk of postpartum depression and may benefit from intervention and close follow-up by health care practitioners. It has been suggested that prevention and intervention programs should focus on amelioration of known malleable risk factors (e.g., providing assistance to couples experiencing increased stress), rather than untested or less robust factors (Capaldi et al., 2012). Our results suggest that increased stress and lack of social support, are related to increased reports of IPV, and it may be beneficial to provide at-risk couples with targeted interventions during the prenatal period.

Limitations and Future Directions

There were several limitations to the study. First, a relatively small number of women reported IPV, which limited analyses that could be conducted. For example, we were unable to probe differences between women reporting chronic IPV (*before* and *during* pregnancy), and women reporting IPV either *before* or *during* pregnancy. Further, two thirds of the women reported IPV both *before* and *during* pregnancy, preventing more extensive comparisons of women reporting IPV *before* or *during* pregnancy. Moreover, marginal differences in the rates of specific IPV types (i.e. emotional, physical, sexual abuse) may be related to the small sample size, or to the dichotomous measurement of the occurrence of IPV interactions, rather than the frequency or severity of incidents, as recommended by Martin and colleagues (2004). Second, although rates of reported IPV were higher in this sample than in other studies, underreporting is a possibility. Cross-cultural issues, such as embarrassment, shame, children being the priority, cultural tradition prohibiting or discouraging disclosure, fear, and inability to speak English (Crandall, George, Marion, & Davis, 2003), may impact a Latina woman's disclosure of IPV.

Third, we examined many factors related to IPV, but are unable to establish causal and temporal precedence between these factors and IPV *before* or *during* pregnancy. However, several of the factors can be considered to have temporal precedence to IPV *before* and *during* pregnancy due to the historical nature of the variable (e.g., country of birth, spouse/dating partner's country of birth, language preference, educational background, age, childhood trauma, parity, number of years living in the U.S., and the age women moved to the U.S). Finally, other potentially important factors not measured in the study may provide insight into the incidence of IPV, including partner reports about stressors, the frequency of IPV behaviors, and other predictors of IPV such as substance use, witnessing IPV between

parents, association with deviant peers, and other forms of psychopathology (Capaldi et al., 2012). It will be important for future studies to include these and other measures to develop a more complete understanding of the occurrence of IPV and related risk and protective factors during the perinatal period.

In conclusion, the current study provided a snapshot of the prevalence of IPV *before* and *during* pregnancy in a community sample of low-income, perinatal Mexican-American women. The findings on prevalence rates and related demographic and general and culturally-linked psychosocial factors were in support of prior research, and extended our understanding of potential differences in the critical temporal contexts of *before* and *during* pregnancy. Additionally, our results provide strong evidence for an elevated risk of postpartum depressive symptoms for Mexican American women experiencing IPV, bringing greater awareness to a very complex and harmful situation. Finally, results provide potential targets for IPV prevention and intervention efforts, as well as implications for future research.

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Table 1
Demographic characteristics, general psychosocial factors, and culturally-linked psychosocial factors of study participants (n = 320)

<i>Categorical variables</i>	<i>n (%)</i>
Participant Country of Birth	
United States	43 (13.4%)
Mexico/Other	277 (86.6%)
Marital Status	
Married/Living Together	247 (77.2%)
Single/Separated/Divorced	73 (22.8%)
Spouse/Dating Partner Country Birth	
United States	57 (20.4%)
Mexico/Other	222 (79.6%)
Annual Income	
< \$15,000	190 (60.9%)
\$15-30,000	93 (29.8%)
>\$30,000	29 (9.1%)
Employment Status	
Full/Part-Time Employment	52 (16.3%)
Not Employed	268 (83.8%)
Language of Interview	
English	61 (19.1%)
Spanish	259 (80.9%)
<i>Continuous variables</i>	<i>M (SD)</i>
Education	10.16 (3.21)
Age (range: 18-42)	27.86 (6.48)
Age moved to U.S. (range: 0-35)	15.76 (7.78)
Years living in U.S. (range: 0-32)	11.91 (5.98)
General Perceived Stress	4.73 (2.97)
Economic Hardship*	2.80 (1.23)
Cultural Stress	6.49 (8.13)
Social Support	51.05 (15.59)
Childhood Trauma	4.75 (7.46)
Anglo Orientation	2.57 (0.98)
Mexican Orientation	4.26 (0.60)
Prenatal Depressive Symptoms	6.11 (5.53)
Postpartum Depressive Symptoms	3.27 (3.97)

Note.

* non-standardized results

Table 2

Zero-order correlations among IPV and demographic variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. IPV <i>before</i> pregnancy	--										
2. IPV <i>during</i> pregnancy	.65**	--									
3. Country of Birth ^a	-.15**	-.22**	--								
4. RP Country Birth ^a	-.06	-.11 [†]	.30**	--							
5. Language ^b	-.08	-.09	.65**	.45**	--						
6. Employment ^c	.01	.07	-.05	-.05	-.09	--					
7. Education	-.05	.04	.19**	-.22**	-.24**	.10	--				
8. Age	-.05	-.07	.33**	.36**	.39**	.05	-.26**	--			
9. Annual Income	-.11 [†]	-.04	.01	-.10	-.07	.12*	.25**	.05	--		
10. Marital Status ^d	.30**	.28**	-.16**	-.01	-.17**	.14*	-.01	-.15**	-.17**	--	
11. Age Moved to U.S. ^e	-.03	-.02	--	.32**	.44**	-.03	-.18**	.62**	-.06	-.21**	--
12. Years Living in U.S. ^e	.04	.02	--	-.11	-.29**	.06	-.05	.14*	.05	.14*	-.57**

Note.

*
 $p < .05$.**
 $p < .01$.[†]
 $p < .10$. RP = Romantic Partner. dep. = Depressive Symptoms.^a
U.S. = 1; Foreign born = 2.^b
English = 1; Spanish = 2.^c
Full/part-time employment = 1; Not Employed = 2.^d
Married/Living Together = 1; Single/Separated/Divorced = 2.^e
Only those participants not born in the U.S. ($n = 287$) reported the age in which they moved to the U.S. and the number of years living in the U.S.

Table 3
Zero-order correlations among IPV, depressive symptoms, and general and culturally-specific psychosocial factors

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. IPV <i>before</i> pregnancy	--									
2. IPV <i>during</i> pregnancy	.65**	--								
3. Prenatal dep.	.22**	.22**	--							
4. Postpartum dep.	.25**	.16**	.42**	--						
5. Childhood Trauma	.28**	.21**	.37**	.24**	--					
6. General Perceived Stress	.15**	.16**	.59**	.35**	.28**	--				
7. Economic Hardship	.12*	.12*	.34**	.33**	.23**	.37**	--			
8. Cultural Stress	.13*	.03	.23**	.29**	.29**	.19**	.35**	--		
9. Social Support	-.15*	-.17**	-.27**	-.18**	-.24**	-.33**	-.09	--		
10. Anglo Orientation	.09	.12*	.06	-.06	.04	-.02	-.15*	-.18**	.21**	--
11. Mexican Orientation	-.09	-.04	-.01	.06	-.06	-.07	.08	.10 [†]	.03	-.38**

Note.

*
 $p < .05$.

**
 $p < .01$.

[†]
 $p < .10$. dep. = depressive symptoms.

Table 4
Hierarchical linear regression analyses of IPV before pregnancy and IPV during pregnancy

Predictor	IPV <i>before</i> pregnancy		
	R^2	F change	β
Step 1	.11	$F(3, 319) = 12.10^{***}$	
Participant Country of Birth ^a			-.12*
Marital Status ^b			.25***
Income			-.04
Step 2	.18	$F(7, 319) = 9.40^{***}$	
Childhood Trauma			.21***
Total Stress			.03
Cultural Stress			.07
Social Support			-.06
Predictor	IPV <i>during</i> pregnancy		
	R^2	F change	β
Step 1	.06	$F(3, 319) = 5.60^{***}$	
Participant Country of Birth ^a			-.24***
Marital Status ^b			-.05
Step 2	.11	$F(7, 319) = 4.68^{***}$	
Childhood Trauma			-.01
Total Stress			.14*
Social Support			-.13*
Anglo Orientation			.01

Note.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

† $p < .10$.

^a U.S. = 1; Foreign born = 2.

^b Married/Living Together = 1; Single/Separated/Divorced = 2.