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A Systematic Review and Meta-Analysis of Risk Factors for Postpartum Depression Among Latinas

Lisa M. Edwards¹ · Huynh-Nhu Le² · Mauricio Garnier-Villarreal³

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Abstract

Objectives The purpose of this article was to describe the findings from a systematic review, quality review, and meta-analysis of risk factors for postpartum depression among adult Latinas in the United States.

Methods Databases were searched from inception to May 2020 for studies published in English related to Latina/Hispanic mothers and risk factors of postpartum depression. Of 115 abstracts screened, 10 met the inclusion criteria for the review and meta-analysis. Eleven risk factors from these studies were included: acculturation, age, economic stress, education, marital status, number of children, prenatal depression, recent and remote intimate partner violence (IPV), general social support, and partner/father's social support.

Results Partner/father's social support had a large effect size. Prenatal depression and recent IPV had medium effect sizes, while education, economic stress, general social support and remote IPV had small effect sizes. Negligible effect sizes were found for age, marital status, number of children, and acculturation.

Conclusions Prenatal depression, IPV, social support (general and from partner/father), economic stress and education are risk factors that should be screened for when working with perinatal Latinas. Future directions for clinical practice and research are discussed.

Keywords Latinas · Postpartum depression · Risk factors · Systematic review · Meta-analysis

Significance Statement

This systematic review and meta-analysis of 11 risk factors for postpartum depression among Latinas in the United States adds to the existing research on risk factors for the general population. Results indicate that individual (prenatal depression), socio-demographic (less education, economic stress), and interpersonal variables (low partner/father support, low general support, intimate partner violence) are risk factors that should be screened for and intervened when working with perinatal Latinas.

Introduction

The past 20 years have seen an increase in research on postpartum depression (PPD) among Latinas in the United States (U.S.) (Zayas and Sampson 2014). Studies have indicated prevalence rates between 12 and 59% for depressive symptoms and/or major depression among postpartum Latinas (Blackmore and Chaudron 2014), suggesting this is a significant issue. By the year 2060, 29% of the U.S. population is estimated to be of Latinx origin (Colby and Ortman 2015). Women comprise approximately half of the Latinx population, and Latinas have higher rates of fertility than other ethnic groups (Martin et al. 2015). Additionally, PPD is associated with negative maternal and infant outcomes (Fortner et al. 2011). Nevertheless, Latinas are an understudied group in research in the U.S. (Lara-Cinisomo et al. 2016) and little research has evaluated risk factors in this population. The purpose of this article was to conduct a systematic review, quality review, and meta-analysis of risk factors for PPD among Latinas in the U.S.

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For some women, the transition to motherhood increases risk for the development of mood and anxiety disorders (O'Hara 2009). For Latina mothers, additional contextual factors (e.g., poverty, trauma) and culturally-relevant stressors (e.g., acculturation, immigrant status, border-crossing trauma, discrimination) may contribute to this risk (Beck et al. 2005; Lara-Cinisomo et al. 2016). Research about risk factors for PPD among Latinas has grown in recent years (Lara-Cinisomo and Wisner 2014; Lara-Cinisomo et al. 2019), with results suggesting that many of the risk factors among Latinas are similar to risk factors in the general population—including individual (e.g., previous history of depression, single marital status) and interpersonal (e.g., low social support) factors. Reviews of acculturation and other cultural orientation variables (Beck 2006; Lara-Cinisomo et al. 2019) have shown inconsistent relationships between these variables and PPD. However, to date there have been no systematic reviews or meta-analyses of all possible risk factors in this population, making it difficult to draw conclusions regarding the influence of these factors.

Three meta-analyses of predictors of PPD in the general population have been conducted. First, O'Hara and Swain (1996) identified that history of psychopathology during pregnancy, poor marital relationship, low social support, stressful life events, and low economic status were significant prenatal risk factors for PPD. Non-significant risk factors included maternal age, marital status, education, number of children, employment, relationship duration with partner, and family history of depression. Second, Beck's (2001) meta-analysis, with 25 additional studies, identified the same factors found by O'Hara and Swain (1996) and three additional prenatal factors: self-esteem, single marital status, and unplanned/unwanted pregnancy. Beck's (2001) meta-analysis did not identify non-significant risk factors. Third, Robertson et al.'s (2004) meta-analysis comprised a total of 24,000 participants from findings from O'Hara and Swain (1996) and Beck (2001), and newer studies. Findings revealed the strongest predictors for PPD were prenatal depression, prenatal anxiety, stressful life events during pregnancy or the early puerperium, low social support, and a previous history of depression, while socioeconomic status and obstetric factors were found to have a small but significant effect on PPD. In addition, Robertson et al. (2004) found that child's gender was not associated with PPD.

Robertson et al. (2004) meta-analysis provides the most recent evaluation of risk factors for PPD. However, conclusions regarding risk factors for a particular ethnic group cannot be ascertained from this review. In the only systematic review specific to Latinas, Lara-Cinisomo et al. (2019) explored associations between PPD and certain cultural orientation factors (e.g., marianismo, religiosity, and acculturation); findings from this review yielded inconsistent results. Given that a good deal of research has been conducted in this

area in recent years, a meta-analytic approach of all possible risk factors is warranted.

Methods

A systematic review (including a quality review) and meta-analysis were conducted to evaluate risk factors of PPD among Latinas in the US. The systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist (PRISMA; Moher et al. 2009).

Study Selection

Inclusion criteria were: (a) PPD, as defined by depression/depressive symptoms assessed within roughly 1 year postpartum; (b) depression/depressive symptoms measured with standardized instrument; (c) risk factors; (d) Latina/Hispanic adult mothers; and (e) quantitative studies conducted in the U.S. Exclusion criteria were: (a) studies in which risk factors for Latinas were not analyzed separately (i.e., Latinas were included in analyses with other ethnic groups); (b) studies conducted outside of the U.S.; and (c) studies that were part of an intervention study only, since women selected for interventions are typically based on risk and outcomes are the focus of results, rather than risk factors.

Search Strategy

We conducted a comprehensive literature search on PsycINFO and Medline, CINAHL, SocINDEX, and ERIC for publications up to May 2020 using combinations of the following words: *Latinas or Hispanic women, Latinos or Hispanics, postnatal depression or PPD or perinatal or PND or PPD, risk factors or predictors OR prevalence*. Prevalence was added as a search term to capture studies that also examined risk factors. Our search was restricted to publications that were in English, involved humans, and were non-dissertations. Reference lists of the included studies were reviewed for possible additions.

Quality Review Overview

Once the final list of articles was obtained, the first two authors independently assessed the quality of each study utilizing a modified checklist for evaluating the quality of quantitative studies, which included 14 criteria (e.g., appropriate sample size; Kmet et al. 2004). Quality summary scores were calculated by summing the total score obtained across relevant items and dividing by the total possible score, ranging from 0 to 1, with 1 representing the highest quality study. Any discrepancies in quality ratings were discussed until consensus was achieved.

Meta-Analysis Overview

Data analysis was performed using platform R software (R Core Team 2018) for descriptives, and the R package metafor for meta-analyses (Viechtbauer 2010). Studies were grouped by risk factor. To achieve variability, a risk factor was included in the meta-analysis if there were at least two studies that measured the same factor (Valentine et al. 2010).

In the meta-analysis, a correlation coefficient (r) was used as a standard metric of effect size. Coefficients were transformed into correlations based on an established method of transformation between effect sizes (Card 2012; Rosenberg 2010). The meta-analysis correlation (r) was estimated from the random effects model, suggesting that there is a population distribution of effect sizes and the selected studies represent samples of this distribution (Card 2012; Raudenbush 2009). The results present the random effect r and 95% Confidence interval (CI) across the selected studies. The heterogeneity was estimated with restricted maximum likelihood (REML), and the parameters weighted by the weighted least square estimator (Viechtbauer 2010). The residual heterogeneity of variances was evaluated with the Cochran's Q-test (Cochran 1954), examining if the variability of the observed effect sizes was larger than would be expected based on sampling variability, with a null hypothesis of the studies being homogeneous. Forest plots were used to represent each study's effect size and the meta-analysis' effect size, with the respective variability. To interpret the effect size of each risk factor, Cohen (1992) proposed that values < 0.1 are considered negligible (less than small), > 0.1 = small, > 0.3 = medium, and > 0.5 = large relationship between the risk factor and the depression outcome.

Results

Figure 1 reports the PRISMA (Moher et al. 2009) flow diagram of our results. Once a list of abstracts was identified through databases ($N = 124$) and additional records ($N = 10$), they were screened for duplicates ($n = 19$), reducing the list to 115. These 115 titles and abstracts were screened to remove articles that did not have depression as a main dependent variable, focused on prevalence only, were conceptual review chapters or commentary, qualitative, focused on non-US samples, did not include Latinas, focused on an intervention study, psychometric properties of a scale, or were not related to the topic of perinatal depression, reducing the group to 32 articles. Next, the first two authors reviewed the full-text articles for eligibility. Thirteen articles were excluded, including studies that did not separate Latinas in their analyses, were part of an RCT, or did not include a standardized depression instrument, resulting in 19 articles. Of these 19 articles, an

additional 9 were excluded due to not having appropriate data to conduct the meta-analysis, using the same sample as another included study, and data not being available following author contacts. The remaining ten studies were included in the final systematic review and meta-analysis.

Quality summary scores ranged from .91 to 1.0 and were considered excellent. The most common critique of studies was small sample size. Because of the articles' strong quality, all were included.

Table 1 provides an overview of the studies in the meta-analysis, including sample size, participants' ethnicity/country of origin, depression instrument, timing of assessment, and quality summary score. Six of the ten studies examined women from Mexico (either Mexico- or U.S.-born; Davila et al. 2009; Hassert and Kurpius 2011; Jackson et al. 2015; Kuo et al. 2004; Malek et al. 2001; Sanchez et al. 2020). Three studies reported having Hispanic (Kim and Dee 2018; Pao et al. 2019; Records et al. 2015), and a predominantly non-U.S. born Latina (Valentine et al. 2011) sample. All studies used a screening tool with cut-off scores rather than a diagnostic measure of depression. Davila et al. (2009) used two cut-off scores to operationalize moderate to high (≥ 21) and high (≥ 24) depressive symptoms; we utilized the most conservative score (≥ 21) to capture the largest window of depressive symptoms. Regarding timing of depression measurement, some studies measured depression at multiple postpartum time points (Malek et al. 2001; Valentine et al. 2011). In these studies, we chose the time point that went beyond the typical 2-week postpartum baby blues period (i.e., Malek et al.'s study included within 2 days postpartum) and aimed to capture most of the 12-month postpartum period (i.e., Valentine et al.'s study also had 3 and 7 months postpartum).

Table 2 describes the 11 risk factors, their operationalized definitions and corresponding studies. The assumption of direction of each risk factor was based on findings from previous meta-analyses (e.g., Beck 2001; O'Hara and Swain 1996; Robertson et al. 2004) or systematic review for Latinas (Lara-Cinisomo et al. 2019).

The results for each of the risk factors are summarized in Table 3, including the number of studies and combined sample sizes, effect sizes, confidence intervals, and Cochran's Q. Age, marital status, number of children, and acculturation all failed to reject the null hypothesis of no linear relation with PPD, with negligible effects. Four risk factors presented small effect sizes, including education, economic stress, general social support and remote IPV. Two risk factors, prenatal depression and recent IPV, presented medium effect sizes. The final risk factor, support from the partner/father, presented a large effect size. The findings of small, medium, and large effects sizes (Cohen 1992) are summarized below, and their forest plots are presented in Fig. 2.

Fig. 1 PRISMA flow diagram of search results

Small Effect Sizes

Education

Higher levels of education were hypothesized to be negatively associated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is equal to 0 ($r = -0.138$, $se = 0.015$, $p < 0.001$, 95% $CI = [-0.169, -0.108]$). A negative relationship between education and depression was found (i.e., as education increases by one standard deviation, PPD decreases by 0.13 standard deviations).

Economic Stress

Less economic stress was hypothesized to be negatively associated with PPD. The random-effects estimate shows that we fail to reject the null hypothesis that the correlation

is equal to 0 ($r = -0.114$, $se = 0.063$, $p = 0.069$, 95% $CI = [-0.234, 0.009]$). A negative relationship between less economic stress and depression was found (i.e., as less economic stress increases by one standard deviation, PPD decreases by 0.114 standard deviations).

General Social Support

Having less general social support (GSS) was hypothesized to be positively correlated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is equal to 0 ($r = 0.143$, $se = 0.038$, $p = 0.0002$, 95% $CI = [0.068, 0.218]$). This finding suggests a positive relationship between less GSS and depression (i.e., as less GSS increases by one standard deviation, PPD increases by 0.14 standard deviations).

Table 1 Studies included in meta-analysis

Author (year)	N	Ethnicity/country of origin	Instrument & cut-off criteria	Timing of postpartum period	Risk factors	Quality score (0–1)
Davila et al. (2009)	439	72.4% Mexico-born; 27.6% US-born	CES-D ≥ 21 (moderate to high)	≤ 1 year	Acculturation Age Marital status Number of children	.95
Jackson et al. (2015)	320	Mexican American—13.4% US born; 86.6 born in Mexico	EPDS (no cut-off score reported)	15 weeks	Acculturation General social support Prenatal depression Recent IPV Remote IPV Economic stress	.95
Hassert and Kurpius (2011)	59	80% Mexico-born; 17% US born; 3% El Salvador	EPDS (mild 0–5, moderate 6–15, high 16–27)	Within 6 months	Social support from partner/father	.91
Kim and Dee (2018)	223	Hispanic	EPDS ≥ 10	“One or two infants ages 12 months or younger”	Economic stress Marital status Number of children	1.0
Kuo et al. (2004) ^a	3952	35.9% Mexican; 26.1% Central American; 13.4% Dominican; 10.8% South American; 5.7% Cuban; 7.4% Multiple groups; 7% Other	CES-D ≥ 16	“Immediate postpartum”: within a few days of giving birth	Acculturation Age Economic stress Education General social support Marital status	1.0
Malek et al. (2001)	94	93.6% Mexican	EPDS ≥ 10	6–10 weeks	Age Economic stress Education Marital status Number of children General social support	.95
Pao et al. (2019)	220	Hispanic	EPDS ≥ 11	6 weeks (± 1 –2 weeks)	General social support Social support from partner/father	.91
Records et al. (2015)	139	Hispanic	EPDS ≥ 12	Within 6 months	Age General social support Number of children Prenatal depression	.95
Sanchez et al. (2020)	159	Mexican: 25.8% U.S. born 25.8% 74.2% Mexico born	CES-D ≥ 16	M = 4.64 weeks (SD = 2.096)	Acculturation Prenatal depression	1.0
Valentine et al. (2011)	210	Latina 76% non-US born	Beck Depression Inventory Fast Screen (BDI-FS) ≥ 4	13 months	Acculturation Economic stress General social support Marital status Number of children Prenatal depression Recent IPV Remote IPV	1.0

BDI-FS = Beck Depression Inventory Fast Screen (Beck and Gable 2000); BDI-II = Beck Depression Inventory II (Beck 1996); CES-D = Center for Epidemiological Studies Depression Scale (Radloff 1977); Edinburgh Postnatal Depression Scale (Cox et al. 1987)

^aTo conserve space, ethnic groups that comprised < 10% for the entire sample were combined into an “other” group

Remote IPV

A history of remote IPV was hypothesized to be positively associated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is

equal to 0 ($r = 0.199$, $se = 0.059$, $p < 0.001$, 95% CI = [0.083, 0.315]). The findings present a positive relationship between remote IPV and PPD (i.e., as remote IPV increases by one standard deviation, PPD increases by 0.199 standard deviations).

Table 2 Measurement of risk factors for postpartum depression in meta-analysis

Risk factor	Measurement
Acculturation	Language of interview (Davila et al. 2009; Valentine et al. 2011) Acculturation (Jackson et al. 2015; Kuo et al. 2004; Sanchez et al. 2020)
Age	< 20 years (Davila et al. 2009) 18–24 years (Kuo et al. 2004) < 23 years (Malek et al. 2001) Age (Records et al. 2015)
Economic stress	Economic hardship (Jackson et al. 2015) Income (Kim and Dee 2018; Kuo et al. 2004) Economic status (Malek et al. 2001) Poverty index score (Valentine et al. 2011)
Education	Education less than 9th grade (Kuo et al. 2004) Education lower than high school (Malek et al. 2001)
General social support	Perceived general social support (Jackson et al. 2015; Kuo et al. 2004; Malek et al. 2001; Pao et al. 2019; Records et al. 2015; Valentine et al. 2011)
Marital status	Marital status (Davila et al. 2009; Kim and Dee 2018; Kuo et al. 2004; Malek et al. 2001; Valentine et al. 2011)
Number of children	Number of children (Davila et al. 2009; Kim and Dee 2018) More than one child (Malek et al. 2001) Number of live births (Records et al. 2015; Valentine et al. 2011)
Prenatal depression	Prenatal depression (Jackson et al. 2015; Sanchez et al. 2020; Valentine et al. 2011) Depression during any prior pregnancy (Records et al. 2015)
Recent intimate partner violence (IPV)	IPV during pregnancy (Jackson et al. 2015) IPV during or within 12 months of current pregnancy (Valentine et al. 2011)
Remote IPV	IPV in year before pregnancy (Jackson et al. 2015) Ever exposed to IPV/not recent (Valentine et al. 2011)
Social support from partner/father	Perceived social support from partner/baby's father (Hassert and Kurpius 2011; Pao et al. 2019)

Table 3 Meta-analysis summary, association between postpartum depression and risk factors

Risk factor	Number of studies (combined N)	r	95% CI	Q
<i>Not significant/negligible effect size</i>				
Age	4 (4622)	0.092	– 0.014, 0.197	8.590*
Marital status	5 (4896)	– 0.058	– 0.181, 0.064	47.782*
Number of children	5 (1083)	– 0.054	– 0.168, 0.060	13.277*
Acculturation	5 (5058)	0.001	– 0.026, 0.028	3.96
<i>Small effect size</i>				
Education	2 (4046)	– 0.139	– 0.169, – 0.108	0.203
Economic stress	5 (4779)	– 0.114	– 0.238, 0.009	21.784*
General social support	6 (4915)	0.143	0.068, 0.218	11.527*
Remote IPV	2 (510)	0.199	0.083, 0.316	1.837
<i>Medium effect size</i>				
Prenatal depression	4 (808)	0.406	0.305, 0.506	8.104*
Recent IPV	2 (510)	0.300	0.0237, 0.577	12.436*
<i>Large effect size</i>				
Partner/father's social support	2 (279)	0.578	0.059, 1.09	19.08*

*p < .05 for the Cochran's Q

Fig. 2 Forest plots of effect sizes of risk factors for postpartum depression

Medium Effect Sizes

Prenatal Depression

Prenatal depression was hypothesized to be positively associated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is equal to 0 ($r = 0.406$, $se = 0.051$, $p < 0.001$, 95% CI = [0.305, 0.506]). These findings show a positive relationship between prenatal depression and PPD (i.e., as prenatal depression increases by one standard deviation, PPD increases by 0.406 standard deviations).

Recent IPV

Recent IPV was hypothesized to be positively associated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is equal to 0 ($r = 0.300$, $se = 0.141$, $p = 0.033$, 95% CI = [0.024, 0.576]). These findings show a positive relationship between recent IPV and PPD (i.e., as recent IPV increases by one standard deviation PPD increases by 0.300 standard deviations).

Large Effect Size

Partner/Father's Social Support

Having less partner/father's social support (PSS) was hypothesized to be positively correlated with PPD. The random-effects estimate shows that we reject the null hypothesis that the correlation is equal to 0 ($r = 0.578$, $se = 0.265$, $p = 0.029$, 95% CI = [0.059, 1.09]). This finding suggests a positive relationship between PSS and depression (i.e., as less PSS increases by one standard deviation, PPD increases by 0.58 standard deviations).

Discussion

This study addressed a gap in the literature by providing findings from a systematic review and meta-analysis of 11 risk factors for PPD among Latinas. The strongest predictor for PPD was support received from the partner/father, yielding a large effect size. Additionally, general social support was also important risk factor for PPD, albeit with a small effect size. These findings suggest that receiving support

from a partner is particularly important during the perinatal period. The partner may be an even more critical source of social support for Latina immigrants, who comprised a sizable group across the ten included studies, because of their limited social networks in the country of relocation (Hassert and Kurpius 2011; Sheng et al. 2010). Our findings suggest the importance of differentiating among the sources of social support when assessing risk for PPD, in particular for immigrant women who have been found to have higher rates of PPD (Falah-Hassani et al. 2015).

Prenatal depression was a strong risk factor for PPD, with a medium effect size. As depression during pregnancy is one of the strongest predictors for PPD in the general population, these findings are consistent with previous meta-analyses (Beck 2001; O'Hara and Swain 1996; Robertson et al. 2004). IPV has not been studied in previous meta-analyses but has been shown to be a risk factor for PPD in the general population (Howard et al. 2013; Kendall-Tackett 2007). The current meta-analysis included both recent and remote IPV, finding medium and small effect sizes, respectively. These findings suggest that the traumatic experience of IPV is important to screen for among perinatal Latina mothers, and it may be even more important to attend to the timing of IPV before or during pregnancy.

The current findings identified economic stress and less education as two additional risk factors with small effect sizes. Economic stress has been found to be a risk factor for PPD in previous meta-analyses with the general population (Beck 2001; O'Hara and Swain 1996; Robertson et al. 2004). Less education emerged as a new finding. Education is related to language, health literacy and access, among other variables (Mantwill et al. 2015); therefore, it is possible that this variable may be more relevant—and may confer more risk—in Latina mothers than mothers from other racial/ethnic backgrounds. Given that Latina/os in the U.S. experience poorer educational outcomes than their counterparts (Krogstad 2016), it will be important to further explore this risk factor in future studies.

Three socio-demographic risk factors were not significant in this meta-analysis: age, marital status, and number of children. These findings were consistent with results from previous meta-analyses (O'Hara and Swain 1996; Robertson et al. 2004). Though acculturation has not been included in previous meta-analyses, it contributed a negligible amount to PPD in the current study. However, acculturation is a complex variable that is often measured differently, as a scale (Sanchez et al. 2020) or with proxy variables (e.g., language; Davila et al. 2009). Previous studies have indicated that higher levels of acculturation are related to more negative birth outcomes (e.g., Lara et al. 2005), while other studies have had mixed findings with respect to acculturation and PPD (e.g., Beck et al. 2005; Lara-Cinisomo et al. 2019). Perhaps acculturation itself is not a risk factor, but related

constructs such as acculturative stress or discrimination are more likely to confer PPD risk. Future research would help to further explore these questions.

Limitations

Several limitations are noted in this meta-analysis. First, given that only ten studies included risk factors that could be evaluated, the findings are limited by what has been explored, the number of participants, and the available data across these studies collectively. Having more data would provide stronger conclusions about these risk factors and allow for evaluation of additional risk factors such as immigration status, discrimination, and acculturative stress. Second, additional studies would allow for ethnic group comparisons rather than aggregating data from different groups such as Mexican and 'Latino,' given that researchers have argued that combining samples may obfuscate important differences (Umaña-Taylor and Fine 2001). Third, the variability in the timing of the postpartum period—ranging from the first few days post-birth (Kuo et al. 2004) to 15 months (Jackson et al. 2015)—could affect the relative importance of risk factors. Finally, studies often use different methods for measuring the risk factors of interest while still calling them by the same name (e.g., acculturation), which might have impacted our results.

Implications and Future Directions

Findings from this meta-analysis have clinical and research implications. First, the findings suggest that Latina mothers be screened for multiple risk factors for PPD, including a history of prenatal depression, remote or recent IPV, and lack of social support (in particular from one's partner). In addition, demographic variables such as economic stress and less education should be attended to as part of a full evaluation and continual monitoring. Screening these risk factors in combination can comprehensively address the contextual and socioeconomic challenges of the Latina perinatal population.

Once screened, appropriate follow-up interventions are recommended. Cognitive behavioral interventions are effective to treat and prevent perinatal depression for Latinas (Zayas and Sampson 2014). For example, the Mothers and Babies Course (*Mamás Y Bebés*) was adapted for low-income Latina immigrants to manage their contextual and socioeconomic realities (Le et al. 2015; Muñoz et al. 2007; U.S. Preventive Services Task Force 2019).

Although this meta-analysis largely examined factors that increase risk for PPD, future research should study protective factors, including resources that confer resilience in times of stress. Though variables such as self-esteem have been explored (e.g., Beck 2001), future studies should

include more of these constructs to evaluate their role in PPD. Additionally, with few exceptions (Calzada et al. 2014; Lara-Cinisomo et al. 2019), more research is needed that explores cultural variables that might be relevant in the lives of Latina mothers. The effects of culturally-specific risk factors related to immigration status have yet to be explored in great detail among Latina mothers, though qualitative studies have noted that Latina mothers may not access care for mental health concerns during the perinatal period because of fears of deportation and child protective services reporting (Edwards et al. 2015). Furthermore, the current detention practices of immigrant mothers within the United States will clearly have profound, traumatic effects on perinatal mental health and should become a focus of future research. Finally, more research is needed that explores risk factors across the perinatal period. For example, Rodriguez et al. (2008) found higher levels of depression during pregnancy among IPV-exposed pregnant Latinas compared to non-IPV exposed women, after controlling for poverty, acculturation and other factors. Evaluating risk factors across the perinatal period would allow researchers to identify patterns.

Conclusion

Supporting the perinatal mental health of Latinas can influence the trajectory of her psychological health during pregnancy and once baby is born, thereby positively affecting outcomes for generations to come. More research is needed to further explore risk and protective factors in this population to better inform prevention and intervention efforts.

Compliance with Ethical Standards

Conflict of interest All authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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