2022

La Luz: Illuminating the Effects of Language and Considering the Role of Culture in a Postpartum Depression Prevention Program for Spanish- and English-Speaking Mothers

Erin Flanagan
University of Denver

La Luz: Illuminating the Effects of Language and Considering the Role of Culture in a Postpartum Depression Prevention Program for Spanish- and English-Speaking Mothers

Abstract

Postpartum depression (PPD) is a common and concerning mental health condition. Many prevention programs and interventions have been researched to prevent or alleviate symptoms of postpartum depression. The current study aimed to examine the effects of a psychoeducational PPD prevention program (ROSE), administered in the early postpartum period, on reported PPD symptoms and parenting self-efficacy beliefs in both English and Spanish speaking women. The study investigated the hypotheses that: a PPD prevention program which has been validated in the prenatal period would be efficacious in reducing depressive symptoms when administered postpartum; the PPD prevention program would improve parenting self-efficacy; and the program would have differential effects when administered to English and to Spanish speaking women. Women (n=140) in English (n=98) and Spanish (n=42) speaking cohorts completed pre and post surveys evaluating depression symptoms and parenting self-efficacy beliefs. Dependent-samples t-tests demonstrated that the program was effective in reducing depressive symptoms and clinically significant levels of depression but did not significantly improve parenting self-efficacy. A mixed ANOVA demonstrated that language of instruction did not significantly interact with depression or parenting self-efficacy, but Spanish-speaking participants had significantly lower levels of depression than their English-speaking counterparts. This study suggests that the ROSE program is effective at preventing or reducing symptoms of postpartum depression but does not have significant effects on parenting self-efficacy beliefs, and that Spanish-speaking women may experience or report lower levels of depression. The importance of providing interventions in the postpartum period and of considering language of instruction and culture of participants are explored further.

Document Type

Doctoral Research Paper

Degree Name

Psy.D.

Department

Graduate School of Professional Psychology

First Advisor

Kelly Elliott

Second Advisor

Tracy Vozar

Third Advisor

Galena Rhoades

Keywords

Postpartum depression, Parenting self-efficacy, Interpersonal psychotherapy

Subject Categories

Clinical Psychology | Multicultural Psychology | Psychology

La Luz: Illuminating the Effects of Language and Considering the Role of Culture in a Postpartum Depression Prevention Program for Spanish- and English-Speaking Mothers

A DOCTORAL PAPER
PRESENTED TO THE FACULTY OF THE
GRADUATE SCHOOL OF PROFESSIONAL PSYCHOLOGY
OFFICE OF GRADUATE STUDIES
UNIVERSITY OF DENVER

IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
DOCTOR OF PSYCHOLOGY

BY
ERIN FLANAGAN
NOVEMBER 16, 2022

APPROVED: _____
Kelly Elliott, Ph.D, Chair

_____
Tracy Vozar, Ph.D.

_____
Galena Rhoades, Ph.D.

_____
Shelly Smith Acuña, Ph.D.

Abstract

Postpartum depression (PPD) is a common and concerning mental health condition. Many prevention programs and interventions have been researched to prevent or alleviate symptoms of postpartum depression. The current study aimed to examine the effects of a psychoeducational PPD prevention program (ROSE), administered in the early postpartum period, on reported PPD symptoms and parenting self-efficacy beliefs in both English and Spanish speaking women. The study investigated the hypotheses that: a PPD prevention program which has been validated in the prenatal period would be efficacious in reducing depressive symptoms when administered postpartum; the PPD prevention program would improve parenting self-efficacy; and the program would have differential effects when administered to English and to Spanish speaking women. Women (n=140) in English (n=98) and Spanish (n=42) speaking cohorts completed pre and post surveys evaluating depression symptoms and parenting self-efficacy beliefs. Dependent-samples t-tests demonstrated that the program was effective in reducing depressive symptoms and clinically significant levels of depression but did not significantly improve parenting self-efficacy. A mixed ANOVA demonstrated that language of instruction did not significantly interact with depression or parenting self-efficacy, but Spanish-speaking participants had significantly lower levels of depression than their English-speaking counterparts. This study suggests that the ROSE program is effective at preventing or reducing symptoms of postpartum depression but does not have significant effects on parenting self-efficacy beliefs, and that Spanish-speaking women may experience or report lower levels of depression. The importance of providing interventions in the postpartum period and of considering language of instruction and culture of participants are explored further.

Keywords: Postpartum Depression, Parenting Self-Efficacy, Interpersonal Psychotherapy

Introduction

Postpartum Depression: Understanding the Problem

Postpartum depression (PPD) is a common and concerning mental health condition experienced by many women. While PPD was long believed to impact approximately 1 in 7 to 8 women, and up to 1 in 4 women of color and low-income women (Hobfoll et al., 1995; Pearlstein et al., 2009), global rates of postpartum depression are more recently estimated at 17% of postpartum women (Wang et al., 2021), with a wide range of prevalence rates reported from 4% to 60% (Halbreich & Karkun, 2006). These statistics make research into effective prevention and intervention programs targeted at alleviating levels of depressive symptoms in the perinatal and postpartum period critical for all women, particularly for women of color and immigrant women.

It is important to consider what the term "postpartum depression" encompasses. Although the term "postpartum depression" is commonly used, the Diagnostic and Statistical Manual 5th edition contains a specifier for Major Depressive Disorder, "with peripartum onset", which includes the occurrence of depressive episodes within pregnancy until up to 4 weeks postpartum (American Psychiatric Association, 2013). Research indicates that the limitation of the specifier to 4 weeks postpartum misses many cases of depression occurring in the postpartum period. One study found increased risk for psychiatric outpatient contacts as well as psychiatric hospitalizations through 3 months postpartum (Munk-Olsen et al., 2006), while a large literature review indicated that onset starts often within the first few weeks or months postpartum, but that onset can begin within the latter half of a child's first year of life as well (Goodman, 2003). For the purposes of this paper, "prenatal depression" will be used when referring to depressive episodes occurring during pregnancy and research studying depression in that time period, and

"postpartum depression" will be used to refer to depressive episodes that occur after the birth of a child, inclusive of studies that discuss postpartum depression with onset after 4 weeks postpartum.

Prevalence Rates of Prenatal and Postpartum Depression in Latine Individuals

While in white middle-income populations, approximately 15% of mothers experience depression, research into low-income, Latine individuals indicate rates of elevated postpartum depressive symptoms, which are around 23% for low-income, Hispanic women (Chaudron et al., 2005a). (During this paper, the term Latine will be used as a gender nonconforming term. The terms Hispanic and Latino/a will be used when those were the terms used in the study that is being cited). Prenatal depression in U.S. Latina and Mexican women has indicated even higher prevalence rates of depressive symptoms compared to the postpartum period, with 32% of pregnant U.S. Latinas and 37% of Mexican women demonstrating high levels of depressive symptoms during the prenatal period (Lara et al., 2009). One study examining depressive symptoms in postpartum African American and Hispanic women reported rates as high as 1 in 2 of elevated depressive symptoms (Zayas et al., 2002).

Research also indicates that rates of postpartum depression are significantly higher in low to middle income countries than developed, high- income countries or regions when analyzing studies from 80 countries around the world (Wang et al., 2021). When looking at available data for Spanish speaking countries, studies conducted in Spain found postpartum depression prevalence rates of 9%, while studies in Mexico and South America found rates between 20-29% of postpartum women (Wang et al., 2021).

One major concern with interpreting findings on prevalence rates of prenatal and postpartum depression is that Latine women are a widely heterogenous group, including U.S.

born women as well as individuals from up to 20 Spanish speaking countries around the world, with a variety of ethnicities and cultures. However, Latine women are often studied as a homogenous group. One study attempted to examine differential rates of prenatal and postpartum depression within the Hispanic population; Yonkers et al., (2001) found that when looking at Hispanic women within Dallas County, Texas, 35% of the sample had significant depressive symptoms at approximately 3 weeks postpartum. However, when the sample was split into bilingual Hispanic women and monolingual Spanish speakers, a clinically significant difference was found in rates of depressive symptoms, with 33% of Spanish-only-speaking women having depressive symptoms, but 43% of bilingual Hispanic women having depressive symptoms. It was hypothesized that acculturative stress may negatively affect bilingual speaking women, thus increasing their risk for depression in the postpartum period (Yonkers, 2001).

In addition to challenges around understanding prevalence for the heterogenous group of Latine women, confounding variables are also a concern when considering elevated rates of postpartum depression. Most studies that attempt to look at prevalence rates for Hispanic women include samples that are already at higher risk for developing postpartum depression due to socio-economic variables such as maternal age, income and employment rates (Lara-Cinisomo & Wisner, 2013).

Risk and Protective Factors for Postpartum Depression

Several risk and protective factors have been identified for postpartum depression. The risk factors that have been identified as the strongest predictors of postpartum depression are a lack of social support, poor marital satisfaction, a previous history of a depressive episode, family history of depression, and stressful or negative life events (Robertson et al., 2004; Chen et al., 2019). Women with a history of trauma or abuse, as well as ethnically diverse women,

appear to have higher prevalence rates of depression as well (Rich-Edwards et al. 2006). Protective factors to buffer against developing postpartum depression include being satisfied with one's marital status, pregnancy without assisted reproductive technology, and lack of recent stressful life events (Chen et al., 2019), as well as experiencing desired life-events during pregnancy (Elisei et al., 2013) and low stress in the couple relationship (Banker & LaCoursiere, 2014).

Risk factors have also been considered within the Latine community. In Latinas born in the United States, the strongest risk factor for developing postpartum depression was found to be being pregnant and single (Davila et al., 2009). For Latinas in the United States (both US-born and immigrant Latinas), additional risk factors included lower social support and being unmarried (Diaz et al, 2007) as well as a low sense of mastery, low life satisfaction, and more time in the US in childhood (Heilemann et al., 2004). For women in Mexico, living with a partner without being married was also identified as a risk factor (Lara et al., 2009). Many risk factors for this population mimicked broader identification of risk factors, such as stressful life events, lack of social support, lack of practical support and personal and familial history of depression and suicidal thoughts (Davila et al. 2009; Diaz et al. 2007; Lara et al. 2009; Zayas, 2002).

Impacts of Postpartum Depression on Children of Depressed Mothers

Prevention and treatment of postpartum depression are critical not just for the mother's benefit and rapid remission from symptoms, but because a mother's experience of depression in the antenatal and postpartum period have been found to be detrimental to the mother's offspring as well. In early infancy, infants of depressed mothers demonstrate their own depressed mood as early as 3 months, which persists as the mother's depression persists (Field, 1992). In addition,

mother's postpartum depression affects growth and developmental milestone achievement throughout the first year and predicts negative affect in infants (Field, 1992; Smith-Nielsen et al., 2016; Rigato et al., 2020). The effects of postpartum depression on children are not limited to the first year of life. Postpartum depression has been found to contribute to continued negative mother-child outcomes throughout development, as well as possibly to male's negative cognitive performance through adolescence (Murray, 2010). The relationship between a mother's depression in the antenatal and postpartum development and her children need to be kept in mind to ensure positive outcomes for the family.

Parenting Self-Efficacy and Postpartum Depression

Parenting self-efficacy encompasses parents' beliefs about their capabilities and skills related to the specific tasks of parenting, both the tasks involved in parenting a specific child at one point in development (domain-specific PSE), as well as their perceptions about their overall capabilities as a parent (domain-general PSE) (Moran et al., 2016). Over the past few decades, there has been growing interest in the relationship between parenting self-efficacy beliefs and depressive symptoms in perinatal women (Cutrona & Troutman, 1986; Goodman et al., 2022; Howell et al., 2006; Kunseler et al., 2014; Leahy-Warren et al., 2011; Porter & Hsu, 2003; Teti & Gelfand, 1991; Wernand et al., 2014) as well as the impacts that postpartum depression has on the dyadic relationship and infant outcomes (Field, 1992; Murray, 2010).

Research into the relationship between parenting self-efficacy and depression has confirmed a correlation between lower self-efficacy scores and increased depression symptoms (Howell et al., 2006; Goodman et al., 2022; Leahy-Warren et al., 2011; Wernand et al., 2014) as well as bidirectional effects of parenting self-efficacy and women's mood symptoms (Kunseler et al., 2014; Goodman et al., 2022), emphasizing the mutual influence exerted between

depression and feelings of efficacy in caregivers. Maternal self-efficacy has also been found to mediate the relationship between maternal competence and depression (Teti & Gelfand, 1991), indicating that one's beliefs about one's parenting capabilities are important to consider in addition to their actual competence.

Cutrona and Trouman (1986) theorized and found support for a model in which infant temperament and social support affected women's experience of postpartum depression, which was mediated by parenting self-efficacy beliefs. That is, infant temperament and a woman's level of social support were found to affect her parenting self-efficacy, which then affected her postpartum depression symptoms. Further research has found that infant temperament accounted for significant variance in parenting self-efficacy scores (Porter & Hsu, 2003). More recent research assessed the directionality between the relationship between infant temperament and parenting self-efficacy. Parenting self-efficacy, even when assessed prior to birth, predicted characteristics of infant negative temperament (Verhage et al, 2013), supporting the hypothesis that parenting self-efficacy at least partially predicts infant temperament, and furthering the importance of assessing parenting self-efficacy. Mothers who perceive themselves as more efficacious may parent babies with improved temperaments.

Taken together, the research linking prenatal and postpartum depression, infant temperament, and parenting self-efficacy supports the need to study parenting self-efficacy in the postpartum period, when considering intervention and prevention of postpartum depression.

Assessment of Postpartum Depression Symptoms and Parenting Self-Efficacy Beliefs in English- and Spanish-Speaking Women

Various measures have been used to screen and assess for postpartum depression and parenting self-efficacy. The most used measure to screen for depressive symptoms in perinatal

women is the Edinburgh Postpartum Depression Scale (EPDS), developed by Cox et al. (1987) in Great Britain. Since its development, the EPDS has been used widely in English-speaking communities. The EPDS has also been validated in different languages and in different countries. To date, versions of the EPDS have been validated in Spanish in either pregnant or postpartum women in Mexico (Alvarado-Esquivel et al., 2006), Chile (Alvarado et al., 2015), Spain (Garcia-Esteve et al., 2003; Belén Vázquez & Carmen Míguez, 2019) and Peru (Vega-Dienstmaier et al., 2002). As the most common measure used to screen for prenatal and postpartum depression, the EPDS is widely used in the United States in its original English and in Spanish translated versions in research and practice settings. While it is encouraging that the EPDS has been validated in 4 Spanish-speaking countries, a comprehensive literature review indicated that no Spanish language versions of the EPDS have been validated for use with Spanish speaking women in the United States, despite the fact that 19% of the US population, 62 million individuals, identified as Hispanic or Latino on the 2020 census, and 70% of those speak Spanish in the home, with 28% indicating that they do not speak English proficiently (Funk & Hugo Lopez, 2022). While the EPDS is the most used to assess depression in pregnancy and postpartum, the Hamilton Rating Scale for Depression (HRSD) (Hamilton, 1960) and Beck Depression Inventory-II (BDI-II) (Beck et al., 1996) are also commonly used (Miniati, 2013) in addition to more comprehensive interview-based protocols such as the Structured Clinical Interview for DSM-IV (SCID) (First & Gibbon, 2004) (Zlotnick et al., 2001).

While there is more agreement nationally and globally about the EPDS as the most commonly tool used to measure prenatal and postpartum depression, there is significantly more variability in tools used to measure parenting self-efficacy. A recent systemic review indicated 34 available measures for parenting self-efficacy (Wittkowski et al., 2017). While there are

numerous parenting self-efficacy measures available, a literature review found only three studies validating parenting self-efficacy measures in Spanish. The Perceived Maternal Parenting Self-Efficacy Tool (PMP S-E) (Barnes & Adamson-Macedo, 2007), a robust tool for measuring parenting self-efficacy for parents of hospitalized infants, was validated with primiparous women in Columbia (Vargas-Porras, 2020), and the Parenting Sense of Competence scale (PSOC) (Johnston & Mash, 1989) has been recently validated in Spain (Oltra et al., 2020) and with Mexican-origin mothers in the United States (Curci et al., 2021). Outside of these two scales, it appears that other parenting self-efficacy measures have yet to be validated for use in Spanish.

Interpersonal Therapy Interventions to Prevent and Treat Postpartum Depression

Interpersonal Psychotherapy (IPT) (Klerman et al., 1984) is a well-studied intervention for women with postpartum depression. IPT is a time-limited, dynamically oriented intervention based in attachment and interpersonal theories (Stuart and Robertson, 2012). IPT addresses three targets of intervention: psychiatric symptoms, interpersonal problem areas, and social supports (Stuart, 2012). The interpersonal problem areas addressed in IPT include role transitions, grief and loss, and interpersonal disputes. The problem area of role transitions involves adjustment challenges regarding a changing role or identity, such as the transition into being pregnant or the transition from identifying as a woman, wife or partner to a mother. The grief and loss problem area explores challenges related to any grief or loss, from a more tangible loss such as a previous miscarriage or stillbirth to the more intangible loss of a sense of freedom as a non-parent. The interpersonal disputes problem area addresses common interpersonal disputes, such as disputes around roles and responsibilities, how to communicate about one's needs, and how to find time to communicate about challenges. There are some aspects of IPT that are unique to the postpartum period and emphasized more during IPT for postpartum depression. For example,

emphasis in therapy is placed on key important relationships at this time, including relationships with infants, partners, family of origin and family of the partner, on interpersonal disputes around childcare and rearing practices and lack of emotional support, on role transitions including transitions in whether or not to return to work and social transitions, and on grief and loss issues unique to this period, including perinatal losses such as miscarriages and abortions (Stuart, 2012) and loss of connection with one's identity before motherhood. IPT interventions during the perinatal period also include increased aspects of psychoeducation around the symptoms and course of postpartum depression and can be more directive, such as supporting in finding childcare resources and providing childrearing advice, in addition to augmenting problem-solving skills that allow a woman to address these areas on her own (Stuart, 2012). IPT interventions are often a minimum of 8 sessions in duration (Miniati et al., 2014), typically lasting 12-20 sessions (Stuart & Robertson, 2012), with group interventions often being somewhat shorter in duration.

IPT has been found to be a highly efficacious intervention for postpartum depression. Two meta-analyses evaluating IPT for postpartum depression have found substantial effect sizes (Cuijpers et al., 2008) and that interventions with interpersonal bases had greater effect sizes than cognitively based interventions (Sockel et al., 2011). A systematic review of 11 clinical trials published between 1995 and 2013, including 3 group interventions and one partner-assisted intervention in addition to individual intervention, indicated that IPT produces clinical improvement outcomes including shortened time to recovery from PPD and often-full recovery in several cases of treated patients (Miniati et al., 2014).

Research has also examined the administration of IPT interventions in a variety of creative settings. For example, IPT interventions have been demonstrated to effectively reduce

postpartum depression symptoms when administered in groups at Head Start offices with mothers identified through their schools (Mennen et al., 2021), by nurses trained in delivering IPT over the telephone (Dennis et al., 2020), and when embedded into social-work practice in Israel (Posmontier et al., 2019). One study also assessed modifying a IPT intervention to be culturally relevant for low-income, urban women (Grote et al., 2009). Acknowledging the importance of the mother-infant relationship and the impact of postpartum depression on that relationship and on child outcomes, pilot studies have also been conducted to evaluate to effects and feasibility of implementing both group (Deans et al., 2016) and individual (Lenze et al., 2015) IPT interventions that include interventions to address emotionality in the context of the mother-baby relationship.

The ROSE Prevention Program for Postpartum Depression

Given that postpartum depression is such a prevalent issue globally, especially for women who are low-income and from minoritized communities, it is important to consider the importance of the implementation of prevention programs, in addition to intervention programs, for postpartum depression. While IPT is considered the most effective, front-line intervention for PPD, IPT in its traditional format is still a significant time commitment for prenatal and postpartum, with most programs lasting from 8-20 sessions across multiple months.

Less research is available on the efficacy of brief group interventions based in IPT for postpartum depression. However, one such prevention program, ROSE (Reach Out, Stay Strong, Essentials for mothers of newborns) has a strong evidence-base, demonstrating a reduction by half of cases of postpartum depression in low-income women across a series of random controlled trials (Crockett et al., 2008; Phipps et al., 2013; Zlotnick et al., 2001, 2006, 2016). Studies on the ROSE program analyzed the benefits of the prevention program for several groups

of women at higher risk for PPD, including rural low-income African American women (Crockett et al., 2008), adolescent mothers (Phipps et al., 2013), and women receiving public assistance (Zlotnick et al., 2001, 2006, 2016). The studies involving adolescent mothers and women on public assistance included Hispanic, non-Hispanic Black, and white women.

ROSE is a group psychoeducation program based on IPT. Unlike other IPT interventions, ROSE is a short-term prevention program, and was designed to be administered with 4 sessions in the prenatal period, and one booster session in the postpartum period. The ROSE program includes psychoeducation on postpartum depression and baby blues, discussion in grief and role-loss, and instruction in skills for adjusting to the transition to motherhood, developing social supports and self-care, managing relationships, and communication training in assertiveness (Care New England Health System, 2022).

Research on IPT Prevention and Intervention Programs for Spanish Speaking Women

While some studies on IPT have included Latine women (Handley et al., 2017; Mennen et al., 2021; Phipps et al., 2013; Zlotnick et al., 2006; Zlotnick et al., 2016), the literature review completed for this article indicated that no studies have been completed on the efficacy of IPT interventions for women in the United States when administered in Spanish. Zayas and Sampson's (2013) review of the literature indicated that at the time of publication, only one study on IPT had been administered in a bilingual format, and none in Spanish. Spinelli & Endicott (2003) completed a small study (n=38) comparing a bilingual IPT intervention for antenatal depression to a parenting education program. The IPT intervention was administered to mostly Hispanic immigrants from the Dominican Republic, and their research found that both groups had declines in depression symptoms over time, with women receiving the IPT intervention experiencing significantly lower depression. This research group completed a

follow-up study (Spinelli et al., 2013) including the option for bilingual therapy, with the interventions administered roughly equally among Hispanic, African American, and white women, and found equally significant improvements in depression symptoms in both groups. Limitations included the study's significant attrition (i.e., 31% for the IPT intervention and 44% for the parenting education program) and lack of examining if there were differences among racial and ethnic groups or among participants who completed the bilingual intervention versus the English version.

Like other evidence-based IPT interventions outside of the Spinelli studies (2003, 2013), the ROSE prevention program has been translated into Spanish, but efficacy of the program has not yet been analyzed when administered to Spanish-speaking women. In addition, while some randomized control trials of the ROSE study included Hispanic women (Phipps et al., 2013; Zlotnick et al., 2006; Zlotnick et al., 2016), all were administered in English, and none looked specifically at the effects for Spanish speaking women.

The lack of research on the efficacy of postpartum depression prevention programs and interventions for Spanish speaking women is consequential and demonstrates a significant gap in the literature, given that 20 countries in the world are predominantly Spanish speaking, and there is a significant percentage of Latine women in the United States. Furthermore, it is important that research into providing IPT interventions in Spanish and for Latine women is conducted, given the higher rates of postpartum depression for US Latinas as well as women in Latin American countries (Chaudron et al., 2005a; Lara et al., 2009; Zayas et al., 2002, Wang et al., 2021).

Effects of IPT interventions for PPD on Parenting Self-Efficacy Beliefs and Infant Outcomes

The interrelationship between depression, parenting self-efficacy beliefs, mother-baby relationships and child outcomes indicate that is important to consider not only whether IPT

interventions and prevention programs are effective in preventing or reducing symptoms of postpartum depression, but if a parent's beliefs about their capabilities will improve as depression remits following therapeutic IPT programs and interventions.

While it is well-established that IPT can reduce or prevent symptoms of postpartum depression (Cuijpers et al., 2008; Sockel et al., 2011; Miniati et al., 2014), less research exists on the secondary benefits of IPT targeted at decreasing postpartum depression. The limited research conducted to date reveals mixed results on the benefits of IPT to the parent-child relationship, parenting efficacy beliefs, parent-child relationships and child outcomes (Nylen et al., 2006; Mulcahy et al., 2010; Forman et al., 2007).

Nylen et al., (2006), completed a review of the literature on psychotherapy interventions for depressed mothers that also evaluated secondary outcomes including parental stress and child outcomes. At the time of the review, studies demonstrated that while there were consistent improvements in maternal depression and improvements in reduction of parenting stress, children of depressed mothers did not appear to benefit from the interventions in kind, showed higher negative affect, lower attachment security, and more externalizing and internalizing challenges than children of nondepressed mothers or similar levels of behavior challenges as children of depressed mothers who did not receive intervention. While psychotherapy for depressed mothers consistently showed improvements in mother's moods and some improvement in stress reduction and some improvement in maternal perceptions and sensitivity, interventions addressing the mother-infant relationship, such as home visiting and dyadic therapy, showed more consistent benefit for the children involved (Nylen et al., 2006).

Since the Nylen et al. review (2006), some research has explored secondary outcomes of IPT interventions beyond depressive symptoms, with mixed results. Mulcahy et al. (2010) found

that Australian women enrolled in a group IPT intervention improved significantly more in depression remission than a control group and had more improvement in both marital functioning and perceptions of the mother-infant relationship compared to controls. In contrast, Forman et al. (2007) found that while IPT was effective at reducing postpartum depression symptoms, mothers that received IPT and recovered from PPD had children at 18 months follow-up with lower attachment security, higher negative affect and more internalizing and externalizing behavior problems than those of mothers in a nondepressed control group, indicating again that an IPT intervention, while effective for remission of postpartum depression, may not be sufficient for improving outcomes for children.

Only one study was found that assessed for changes specifically in parenting self-efficacy beliefs following an IPT intervention for postpartum depression. Handley et al. (2017) study of a racially and ethnically diverse population of low-income urban mothers found that improvements in maternal depression following an individualized IPT intervention were related to less disorganized attachment characteristics and less difficult temperament at 8 months follow up, in addition to improved parenting self-efficacy beliefs.

Overall, this review of research on IPT intervention's secondary benefits for maternal beliefs and child outcomes reveals mixed results, with overall more positive outcomes for changes in maternal beliefs (e.g., parenting self-efficacy, perceptions of the mother-infant relationship) than for child temperament and behavior outcomes. However, all of the studies reviewed were completed on more time-intensive group and individualized IPT interventions for women already showing symptoms of postpartum depression. Research on briefer prevention problems such as the ROSE Program has repeatedly demonstrated that these programs result in, on average, half as many enrolled women as controls later being diagnosed with postpartum

depression (Crockett et al., 2008; Phipps et al., 2013; Zlotnick et al., 2001, 2006, 2016). However, these ROSE studies did not examine other effects of the program beyond depression rates, such as changes in parenting self-efficacy, maternal sensitivity, or infant temperament for women enrolled in ROSE compared to controls.

Summary of Current State of Research on IPT for English and Spanish Speaking Women

Postpartum depression is a persistent issue both in the United States and globally, particularly in lower to middle income countries, requiring continued efforts not only into treatment programs, but into prevention programs as well. In the United States, prevalence rates for Latina women, as well as other women of color, continue to be higher than for white women. Latina women in the United States also commonly experience situations that place them at higher risk for developing postpartum depression, such as challenges with acculturative stress, lower incomes, and disruptions to their social support systems from migration challenges. Latina women are also often underserved in the perinatal time period; while they are reporting depression at high rates, in one study, only half reported receiving information from their health care providers about their concerns (Chaudron et al., 2005b). In addition, they can face significant barriers to receiving treatment, including challenges with childcare, transportation, time constraints and language barriers (Miranda et al. 2003; Muñoz et al. 2007).

Programs aimed at preventing postpartum depression are important not only for women at risk for developing depression after birth, but for their children as well. Women with higher levels of depression experience lower levels of parenting self-efficacy (Cutrona & Tourman, 1986; Goodman et al., 2022; Howell et al., 2006; Leahy-Warren et al., 2011); both are related to poorer infant temperament and both immediate and persistent poorer outcomes for their children (Field, 1992; Smith-Nielsen et al., 2016; Rigato et al., 2020). Evaluation of an evidence-based

IPT postpartum depression prevention programs, ROSE, has established its efficacy in reducing rates of postpartum depression by half, but has not yet examined impacts of the program on other important outcomes, such as parenting self-efficacy or mother-child relationship variables.

Interpersonal Psychotherapy (IPT) is a well-established prevention and treatment tool for postpartum depression (Cuijpers et al., 2008; Sockel et al., 2011; Miniati et al., 2014). However, many studies establishing its efficacy have been completed on women with higher incomes (Forman et al., 2007, Mulcahy et al., 2010), and all studies completed in the United States, but two (Spinelli & Endicott, 2003; Spinelli et al., 2013), appear to have been conducted with English speaking populations, despite the significant and growing proportion of Spanish speaking families in the United States. No IPT interventions have been evaluated for efficacy specifically for perinatal Latina women in the United States (Zayas & Sampson, 2013). Research is needed to evaluate the differential effects of IPT programs for populations that speak other languages than English, and to explore the possibilities of culturally adapted interventions to better serve women from non-dominant cultures.

Purpose of the Current Research Study

The purpose of my doctoral paper is to determine whether a group-administered psychoeducational prevention program based in IPT will reduce postpartum depression symptoms and increase parenting self-efficacy in mothers when administered in the postpartum period in either English or Spanish. My hypothesis is that La Luz, a group psychoeducation intervention on postpartum depression based on ROSEs, will reduce levels of postpartum depression in at-risk mothers, reduce the percentage of women demonstrating clinically concerning levels of postpartum depression (EPDS $\geq$ 10) when administered in the early postpartum period (0-6 months postpartum) in both English and Spanish. I also hypothesize that

the same mothers will experience improvements in parenting self-efficacy beliefs following administration of the intervention. In addition, I believe that La Luz will be an effective intervention for Spanish speaking as well as English speaking populations. I will explore the interaction effects between instructional language and outcomes (depression and parenting self-efficacy) as well as the between group differences between the Spanish and English cohorts in depression and self-efficacy ratings.

Method

La Luz Prevention Program

The La Luz prevention program uses the ROSE (Reach Out, Stand Strong, Essentials for New Mothers) Program (Zlotnick et al., 2001), administered in the postpartum period, a modification from the original curriculum, which was studied for administration in the prenatal period. La Luz classes are held once per week for four consecutive weeks for one and a half hours each. The curriculum is facilitated by Thriving Families staff and interns, who are Master and Doctoral level students in local clinical psychology and social work University programs. In addition to the ROSE curriculum, facilitators also offer a one-page handout and brief psychoeducation and discussion each week on a topic regarding caring for and connecting with a newborn, which are modified from Thriving Families' "Baby Wonder" courses. The original ROSE program has a fifth postpartum "booster session" which was not included in La Luz because the participants were already postpartum when the program began.

Setting

The La Luz intervention was co-facilitated by Thriving Families staff and graduate student externs from the University of Denver and surrounding universities. Due to the ongoing presence of the COVID-19 pandemic during the present study, all groups were administered

online via a secure Zoom platform. Each La Luz cohort was administered in English or Spanish, and participants enrolled in each cohort depending on their preferred language. Before each cohort intervention began, facilitators delivered bags of program materials to participants' homes. If participants missed sessions, they were offered small-group or individual make-up sessions over Zoom, with topics consolidated as needed to accommodate women making up sessions.

Participants

Participants in the current study included a subset of women who were enrolled in services at Thriving Families and referred to the La Luz program. Participants were either concurrently or previously enrolled in "MotherWise", a healthy relationship education program devoted to serving low-income pregnant women and new mothers. La Luz participants were referred to La Luz by either their Family Support Coordinator or their individual therapist at Thriving Families. Participants in the current study ranged from ages 18 to 57 and were either monolingual English or Spanish speaking or bilingual English and Spanish speakers. Participants who were bilingual chose whether to enroll in the English or Spanish speaking cohorts of the program. Inclusion criteria for this study comprised any participant enrolled in the La Luz program. There were no exclusion criteria.

Demographic Characteristics

Overall, 254 women were enrolled in La Luz at the time of their classes beginning during the study (August 2020 through June 2022). 190 participants who were enrolled in La Luz completed either a pre- or a post-survey about their symptoms and experiences. Participants were asked to identify their race and ethnicity, which were combined into one question. 62% of all participants identified as Hispanic or Latino, 21% identified as African American or Black, 17%

identified as Caucasian or White, 8% identified as American Indian, Native American, or Alaska Native, 5% identified as Asian, Pacific Islander, or Native Hawaiian, and 7% identified as "Other". Participants' ages ranged from 15 to 57, with a mean age of 29 years old. 26% of participants endorsed experiencing birth complications during their most recent birthing experience.

Participants were also asked to identify their employment, income and education status. When beginning La Luz, 77% of women were "not currently employed", 11% were engaged in "full-time employment" and 12% were either engaged in steady part-time (1-34 hours/week), variable hourly employment, or temporary, occasional, or seasonal employment. Participants were asked to identify income earned in the 30 days prior to beginning La Luz. In the 30 days prior to beginning La Luz, 70% of participants made less than $500 per month, 27% made between $500-2,000, and 3.4% made more than $2,001. Participants were also asked to identify the highest degree, diploma or certification they have received. 19% never received a degree or diploma, 12% received a GED or equivalent, 25% received a high school diploma, 30% completed some postsecondary schooling (either vocational/technical certification or some college), and 15% completed a postsecondary degree (Associate's degree, Bachelor's degree, or Master's degree/advanced degree).

Participants were not asked how many weeks postpartum they were at enrollment; however, 171 of the participants identified their baby's birth date, which allowed for an estimate of months postpartum at time of enrollment. Participants, on average, were 1 week to 5 months postpartum when beginning La Luz (M=2.97, SD=2.79), with the range being prenatal (*n*=2) to 12 months postpartum at time of enrollment. Detailed demographic results are listed in Table 1 in the appendix.

Procedure

Recruitment for the Current Study

After being enrolled in La Luz, participants were informed about the survey and study by La Luz class facilitators. Data collection for the study began in August 2020. Participants were sent a pre-survey one to two days before the program began. Following the last class, participants were sent a post-survey within 24 hours of the class ending. If participants did not fill out the survey, they received a reminder link and were given one week after completing the last La Luz class to complete the post-survey. Due to lower-than-expected completion rates of the pre- and post-survey, an incentive for survey completion was added in December 2021. Following the addition of the survey incentive, participants received $20 on a cash card for completion of the pre- or post-surveys. La Luz participants received $10 on a cash card for each class they attended.

64 of the 254 enrolled participants (25%) did not complete a survey before or after La Luz. Overall, 76% of participants (194) completed at least 3 of the 4 classes. 12 women who were enrolled never attended a class. Participants who completed either a pre- or post-survey completed an average of 3.42 classes (M=3.42, SD= .994).

Cohorts of La Luz that were included in the study were run 4 weeks at a time from to September 2020 through June 2022. Typically, two cohorts were administered in English consecutively, followed by a cohort administered in Spanish.

Measures

Demographics. Participants were provided an online survey that asked several demographic questions. For the purposes of this study, participants were asked to identify the following information: participant's age, birth date of their baby, experience of birth

complications, self-identified race and ethnicity, gender identity, personal income over the previous 30 days, employment status, and education level. Participants were asked other demographic questions on the survey, which were not reported or analyzed for the purposes of the present study (e.g., relationship status).

Postpartum Depression. The Edinburgh Postnatal Depression Scale (EPDS) was used to measure reported postpartum depression symptoms. The EPDS is a 10-item self-report scale used to screen for Postnatal Depression (Cox et al., 1987). Each item is completed indicating how a woman has felt in the past 7 days, and each item is given a score ranging between 0 to 3 based on participant responses. The scale generates possible depression scores between 0 and 30. Various clinical cut-offs have been used for the EPDS, with some arguing for the benefit of a clinical cut-off of 13 and others arguing for a lower threshold of 10 as a cut-off score (Cox & Holden, 2003). The current study used 10 as a cutoff score for clinical depression. The translated version of the EPDS used was a version developed at the University of Iowa based on earlier Spanish translated versions of the EPDS and is affiliated with Dr. Michael O'Hara. This version has not been involved in validation studies. This version of the EPDS is easily available on the internet and appears to be widely used in clinics around the United States. The EPDS was administered to all participants as part of the original study.

Parenting Self-Efficacy. The Assessment of Parenting Tool (APT) is a measure of parenting self-efficacy to be used in the first 24 months of a child's life. The APT includes task-level items on a Domain-Specific subscale (APT-DS) for various age-referenced versions of the measure between 0-24 months postpartum, and overall parenting self-efficacy, measured on a Domain-General subscale, (APT-DG). The APT-DG was used for the purposes of this study, due to the varying stages of postpartum of the participants and with mindfulness of the length of the

survey participants were asked to complete, inclusive of items that are not addressed in the current study. The APT-DG is a 12-item self-report measure, with items that can be answered with responses scored from 1 to 5 in response to a statement about parenting (i.e., Disagree, Disagree Slightly, Agree Somewhat, Agree, Strongly Agree). (Moran et al., 2016). A sample statement includes: "I would be a good person for another parent to learn from.". Possible scores on the APT-DG range from 12 to 60. The Spanish version of the APT-DG scale used in this study was translated by graduate students at the University of Denver Graduate School of Professional Psychology for a student project. The translated version has not been validated. The APT was added to the study in September 2021, and thus administered to a subsection of participants enrolled in the study.

Results

Main Effects

The initial research questions in the current study of the La Luz program addressed the overall effects of administering La Luz during the early postpartum period and were threefold. Research question one was, "Does participation in La Luz reduce reported depression symptoms?" Research question two was, "Does participation in La Luz reduce the percentage of women reporting clinically significant depression symptoms?" Research question three was, "Does participation in La Luz improve parenting self-efficacy beliefs?"

To address the first and second research questions, "Does participation in La Luz reduce reported depression symptoms?" and "Does participation in La Luz reduce the number of women reporting clinically significant depression symptoms?", data were analyzed from 140 participants that completed both pre- and post- measures of depression symptoms. Two-tailed dependent samples *t*-tests were conducted on those participants to evaluate changes in reported depression

symptoms and clinical levels of postpartum depression in participants before and after the La Luz intervention. There was a significant difference in depression scores from pre- (M=5.74, SD= 5.67) to post-intervention (M=4.84, SD=5.10) as measured by the Edinburgh Postpartum Depression Scale (t=2.34, df=139, p=.021). In addition, a significant difference was found between the number of participants who were above the identified clinical cutoff for depression from pre to post-test (t=2.07, df=139, p=0.041). Before intervention, 22% of participants met or exceeded the cutoff for postpartum depression, and after intervention, 15% of participants met or exceeded the cutoff. Effect sizes were also calculated using Cohen's *d.* The effect size was small for both changes in overall depression scores (*d*=.198) and for changes in participants meeting the clinical cutoff for depression (*d*=.175).

84 participants completed both pre and post measures of parenting self-efficacy beliefs, using the General Domain of the Assessment of Parenting Tool (APT-DG). A two-tailed dependent samples *t*-test was completed to evaluate changes in parenting self-efficacy beliefs from pre to post intervention. The difference between APT-DG scores from pre (M=53.40, SD=5.92) to post (M=54.20, SD=5.45) did not reach statistical significance (t= -1.45, df=83, p=.151). Effect sizes were also calculated using Cohen's *d.* The effect size was small for change in parenting self-efficacy scores (*d*= .158)

A summary of data on the main effects of the program are presented in Table 2 in the appendix.

Evaluating the role of programming language on depression and parenting self-efficacy

Thriving Families provides services in English and Spanish. As such, participants chose to enroll in either an English language or Spanish language cohort of La Luz. Of the participants

who completed both pre- and post-surveys, 98 were enrolled in English cohorts, while 42 were enrolled in Spanish language cohorts.

The importance of the language of programming on outcomes for participants in the Spanish and English cohorts were measured in two ways. First, a mixed ANOVA was run to assess the impact of language of programming on overall depression scores, depression cut-off scores, and parenting self-efficacy scores. The first research question about the impact of language considered the main effect of language of programming and participants: "Averaging across time, is there a difference in reported overall depression scores between instructional language groups?" The between-subjects test indicated that there was a significant main effect of instructional language on overall depression, F (1, 138) = 7.79, p =.006. Averaging across time, participants in the English group reported significantly higher levels of depression (pre M=6.61, SD = 5.89, post M=5.44, SD= 5.16) compared to participants in the Spanish group (pre M= 3.71, SD=4.60, post M=3.43, SD=4.74).

An analysis was also completed to assess for interaction effects in order to answer the research question, "Does the change in depression scores depend on instructional language?" The analysis revealed that there was not a significant interaction between intervention across time and language of programming on reported depression scores (F = 1.10, p = .296), meaning the language of programming did not significantly impact the amount of change in reported depression symptoms over the intervention.

In addition to overall reported depression symptoms, mixed ANOVA were also run to consider the effect of language of programming on participants' reported parenting self-efficacy beliefs. The between-subjects test indicated that there was not a significant difference between language groups in reported parenting self-efficacy beliefs when averaging across time (F = .78,

p = .380). In addition, the within-subjects analysis revealed that there was not a significant interaction between intervention across time and language of programming on reported parenting self-efficacy (F = .565, p = .454). See Table 3 in the appendix for a summary of mixed ANOVA results.

A post-hoc analysis was also completed to further understand the impact of the program based on the instructional language the programming was administered in. The sample was split into Spanish and English groups to evaluate the main effects of the program on reported depression and parenting self-efficacy per language group. Two-tailed paired samples t-tests were run on each language group.

When analyzing data only for participants enrolled in English language programming, a significant difference was found in reported depression symptoms over the course of the intervention (t=2.63, df=97, p=.010). The difference found between the number of participants who were above the identified clinical cutoff for depression from pre to post-test (t=1.71, df=97, p=0.090) did not reach statistical significance. Effect sizes were also calculated using Cohen's *d.* The effect size was moderate for change in overall reported depression scores (*d*=.266) and small in change in participants meeting the clinical cutoff for depression (*d*=.173). The difference between APT-DG scores from pre to post did not reach statistical significance (t= -1.56, df=58, p=.124) but had a moderate effect size (*d*= .203).

When analyzing data only for participants enrolled in Spanish language programming, decrease in reported depression symptoms over the course of the intervention did not reach statistical significance (t=.372, df=41, p=.712), with a small effect size (*d*= .057). In addition, the decrease in participants above the identified clinical cutoff for depression from pre to post-test did not reach statistical significance (t=1.138, df=41, p=.262) with a small effect size (*d*=.176).

Lastly, the increase in reported parenting self-efficacy scores did not reach statistical significance (t= -.176, df=24, p=.862), with a small effect size (*d*= .035). Please see Table 4 in the Appendix for a summary of post-hoc dependent samples t-test results.

Discussion

Summary of Findings

Overall, across participants, the La Luz program was effective at reducing depressive symptoms and significantly reducing the percentage of participants experiencing clinical levels of postpartum depression from 22% to 15%. In addition, the analysis showed that it is feasible and beneficial to implement this program in the postpartum period in addition to prenatally, which has already been demonstrated in repeated trials (Crockett et al., 2008; Phipps et al., 2013; Zlotnick et al., 2001, 2006, 2016). Administration of postpartum depression prevention programs in the postpartum period is important to provide and study for several reasons. Despite the limitations of the DSM-V peripartum onset specified, which limited diagnosis of peripartum depression through 4 weeks postpartum, many women will experience onset of postpartum depression later in pregnancy, with many studies assessing women for postpartum depression up to a year after birth and finding that postpartum depression is universally present from 1-12 months postpartum (Wang et al., 2021). In addition, it is important to support postpartum women by providing postpartum depression psychoeducation and IPT interventions at periods throughout the first year of motherhood, as they may be a "forgotten" group. Most mothers last mental health check occurs at a brief 6-week postpartum checkup, if at all, during which the priority is often a woman's physical health and discussion of family planning. Furthermore, many women may be more available, practically and psychologically, to participate in group programming in the postpartum period. In the first 6 months postpartum women are more likely

to be home with their children than when they are pregnant and more likely to work during the day or the evenings, making attending programming more possible as long as women are able to bring their babies to group or attend telehealth video groups, such as La Luz, from home with their babies present. Additionally, the postpartum period is a time ripe for psychological change, with so many changes already occurring in a woman's life (Stern, 2005).

When analyzing change in depression scores for English and Spanish speaking cohorts as separate groups, overall reductions in depression scores only reached statistical significance for the English cohort, and changes in clinically significant levels of depression did not reach statistical significance in either group. These results are likely due to the smaller sample sizes of each group, with the Spanish group being much smaller (n=42) than the English group (n=98). It is possible that larger sample sizes would have yielded statistically significant results. Although the results for changes in clinically significant levels depression were not statistically significant for either group, they did appear to show clinically meaningful change. The English group had 26% of participants report EPDS scores of 10 or greater before intervention, and 18% after. In the Spanish group, 14% of women reported scores of 10 or greater before intervention, and only 7% following intervention.

Further analysis demonstrated that instructional language did not have a significant impact on the amount of change of depression over time in the program. That is, both the Spanish and English cohorts experienced similar amount of change in EPDS score reduce from pre to post participation in La Luz. Notably, Spanish language scores started quite low before programming began (M= 3.71, SD=4.60), so floor effects may have impacted results, as there was not as much change to be had for many Spanish speaking participants.

While parenting self-efficacy scores improved across time for all participants, when examining the Spanish and English cohorts individually, no changes in parenting self-efficacy reached the level of statistical significance on any analyses. This could have occurred for a few different reasons. First, since the APT tool was added to the surveys at a later date than the EPDS, there was a smaller sample size of participants who completed the both the APT in pre and post (n =84) compared to the EPDS (n =140). There was a similar amount of change in APT scores and in EPDS scores, and both demonstrated small effect sizes. With a sample as large as the full sample for APT scores, it is likely that the change in parenting self-efficacy scores would have reached statistical significance. Second, there are possible ceiling effects regarding the APT-DG scores. At pre-test, the participants' reported parenting self-efficacy scores were already quite high (M=53.4048, SD= 5.92345, with possible APT-DG scores ranging from 12-60), meaning that there was not much improvement to be had in parenting self-efficacy scores. Moran et al. (2016) noted similar potential ceiling effects in the initial validation of the tool, with scores averaging greater than 4 on the 5-point likert scale for each item.

A third reason that parenting self-efficacy scores did not reach statistical significance may have been that only the general domain of parenting self-efficacy was assessed, while the full APT includes both domain-general and domain-specific evaluations of self-efficacy (APT-DS). APT-DS items were not included in the current study due to the length of the survey participants were given (which included items not reported in this current study) and the logistical challenges of assessing domain-specific skills with varying ages of infants. It's possible that change would have been seen in specific parenting self-efficacy skills related to the differing parenting skills related to rearing young infants, as opposed to general feelings of parenting self-efficacy, which participants already reported as being quite high before

participating in La Luz. Lastly, it is possible that the APT-DG scale is measuring a construct that is slightly different than parenting self-efficacy, such as psychoeducation on parenting skills or feelings of social and practical support from participating in Thriving Families programming.

Analysis of between-groups effects of the La Luz program on depression yielded notable findings. Participants in the Spanish-speaking cohort reported significantly lower depression scores averaging across pre- and post-tests than the counterparts enrolled in the English-speaking cohorts, both before and after intervention. Three main reasons could account for these results. First, the group of women who chose to enroll in Spanish speaking cohorts may have actually had lower levels of depression. Second, it is possible that assessments translated to Spanish do not appropriately capture the experience and expression of depression culturally, as none have been validated in US Spanish speaking populations. Validated versions of the EPDS, which were validated for prenatal or postpartum populations in Mexio, Spain, Chile, and Peru (Alvarado et al., 2015; Alvarado-Esquivel et al., 2006; Belén Vázquez & Carmen Míguez, 2019; Garcia-Esteve et al., 2003; Vega-Dienstmaier et al., 2002) are not available online; as a result, comparisons of translations between the widely used and available US Spanish translation used in this study and the validated versions could not be made. Lastly, it is possible that the participants in the Spanish speaking cohort were more reticent to report challenging feelings and depressive symptoms on an online form than their English cohort contemporaries.

A post-hoc analysis was completed to explore demographic differences between the English and Spanish cohorts. 93% of the Spanish cohort identified as Hispanic or Latino, while in the English cohort, 49% of participants identified as Hispanic or Latino, 29% as Black or African American, 24% as White or Caucasian, 7% as Asian, Pacific Islander, or Native Hawaiian, 11% as American Indian, Native Hawaiian or Native Alaskan, and 7% as “Other”.

In addition to differences in Race and Ethnicity, the Spanish cohort overall had less educational experience, less participants who were employed, and lower incomes over the last 30 days. While participants in both cohorts had low incomes over the last 30 days (only 10% of participants in the Spanish cohort and 1.7% in the English cohort made over $2,000), the vast majority of participants in the Spanish cohort had made less than $500 in the last 30 days (80% vs 67% in the English cohort). The Spanish cohort also had less employment while participating in the program. In the Spanish cohort, 91% of participants were not employed and 2% were fully employed while enrolling in La Luz, while in the English cohort, 72% were not employed and 15% were fully employed. The Spanish cohort also had less educational experience than the English cohort. In the English cohort, 52% of participants had a high school diploma or less education, while in the Spanish cohort, 67% had a high school diploma or less, with 33% of participants with less than a high school education (no degree or diploma earned). Please see Table 5 in the appendix for a complete accounting of demographic differences between participants in the 2 language cohorts.

Greater numbers of women in the Spanish cohorts had more known risk-factors for PPD, yet lower levels of depression than the English cohort. Having employment, especially professional careers, has been associated with a reduced risk of postpartum depression, while lower education and low income are associated with heightened risk of postpartum depression (Giallo et al., 2013; Ghaedrahmati et al., 2017). Higher prevalence rates of postpartum depression have also been found for women from non-English speaking households in English-dominant countries and from ethnically diverse families (Blackmore & Chaudron, 2013; Giallo et al., 2013). There could be a few reasons for the seeming conflict between the findings in the current study and previous research on these risk factors. While lower socioeconomic status and

less education have been identified as risk factors for PPD, it is also well-established that high levels of social support are a protective factor against PPD and lack of social support or conflict with family members or low community support are risk factors (Blackmore & Chaudron, 2013; Ghaedrahmati et al., 2017). These factors were not included in this study, and it is possible that the Spanish cohort had more social support and protective factors than their counterparts in the English cohort, protecting them against the risks of lower employment, education and income.

It is also possible that depression was not accurately assessed in the Spanish cohort. As previously mentioned, the EPDS used in this study, though commonly used in the US, has not been validated on Spanish speaking population. Thus, it is possible that participants in the Spanish speaking cohort may not see their symptoms as "depression", the questions in the EPDS are not measuring symptoms that Spanish speaking members of the Latine community see as depression, or that there are cultural, social and community factors that are protecting members of the community from experiencing similar rates of PPD. Clearly, research is needed into use of the EPDS in Spanish speaking populations in the US, including validation studies, especially given that Latinos are the largest minority in the US and the group with the highest birth rate of all racial/ethnic groups (Blackmore & Chaudron, 2013).

Influence of Acculturation and Cultural Manifestations of Depression on Reporting Symptoms of Depression

Given that this study explored the effects of language of instruction on depression rates and parenting self-efficacy, a further exploration of what is known about the expression and reporting of depression among the Latine community is critical. While US Latines are often studied as one homogenous group, there are many differences among US Latines, including whether Latines are US or foreign born, the number of generations their family has been in the

US, and cultural and geographic differences within the US and from home countries. Country of origin, ethnic identity (e.g., Mexican American/Chicana, Salvadoran American), and generational status (e.g., first- or second-generation) were not demographic data gathered in this study. However, self-selected language of programming may stand as a potential proxy for acculturation, as it is likely that Latina/Hispanic women who choose to enroll in the Spanish language cohorts are less acculturated and may be more recent immigrants than their Hispanic counterparts in the English cohort.

Acculturation has different definitions but can be defined as the experience of an immigrant's adaptation to a host country (Blackman & Chaudron, 2013; Davila et al. 2009), with high levels of acculturation signifying adaptation to the dominant culture, and low levels indicating more retention of one's home or non-dominant cultural practices and beliefs. There is some current debate about the influence of acculturation on depressive symptoms in Latina women (Blackmore & Chaudron, 2013) and one study found that acculturation and immigration status did not affect depression symptoms in pregnant women after accounting for income, education, and employment (Kuo et al., 2004). In contrast, a number of research studies indicate that women who are more acculturated or have been in the United States longer (e.g., second-generation US residents) have higher rates of depression than those with lower levels of acculturation. A study that used birth country and language preference as signifiers of acculturation found that perinatal women with higher levels of acculturation were more likely to express depressive symptoms (Davila et al., 2009). Heilemann et al., (2004), meanwhile, found that perinatal women who spent their childhoods in Mexico and less time in the US as children had lower levels of depression, while language and country of birth did not affect intragroup differences in depression rates. A study of mental health in the broader Latine population (not the

perinatal population specifically) examined the effects of *familismo* and discrimination on Latines mental health (Ayón et al., 2010). *Familismo* is an important Latine cultural value, which places value of the family's wellbeing over the individual, and has features of family pride, belonging, and obligation to the family (Ayón et al., 2010). *Familismo* protects both children and adults from negative mental health outcomes of internalizing depressive symptoms, and perception of discrimination affects depression for children, while for adults, discrimination does not affect internalization symptoms, possibly due to the fact that Latine adults have accepted discrimination as a cost of the experience of living in the US (Ayón et al., 2010). Anthropological research on perinatal women has also supported the hypothesis that the Latine cultural orientation of *familismo* is linked to positive mental health outcomes for perinatal women (Fox, 2021).

High levels of acculturation may have a negative impact on mental health outcomes for Latine women for several reasons. Social support is a broadly protective factor for perinatal women. Women who are more acculturated may experience less social support and distance from protective cultural values such as *familismo* and reliance on the family system, at a time when high social and familial support is critical for practical support and emotional well-being. More acculturated women may also experience more acculturative stress and tension between their home culture and the dominant culture, which may negatively affect their mental health. Women in the Spanish speaking cohort may have experienced less acculturative stress and may be more closely connected to the protective value of *familismo.* They may also experience increased social support and decreased pressure to provide economically for their family. Another cultural value, *Marianismo*, may have affected results as well. *Marianismo* is defined as "the traditional female role of virtue, passivity, and priority of others over oneself" (Lara-

Cinisomo et al., 2019, p. 557). There is very limited research on *Marianismo* and perinatal depression, and their relationship is not well understood. However, a recent narrative review of the three studies exploring these relationships indicate that *Marianismo* may be protective in pregnancy but have deleterious effects postpartum (Lara-Cinisomo et al., 2019).

In addition to the possibility that the sample of Spanish speaking women experienced less acculturative stress, more social and cultural support, and less depressive symptoms, it is also possible that the EPDS is not the most accurate assessment tool for measuring depression symptoms in Spanish speaking US Latines in research or practice. Research indicates that Latine women do not express or experience depression in the same way as the majority culture in the United States. Qualitative research with Latina immigrants with previous positive PPD screenings has explored Latina cultural beliefs around postpartum depression (Sampson et al., 2018), and indicates that PPD may be a greater cultural problem in the US because in their home countries, women experience significantly more support after childbirth. Women discussed traditional practices such as *La Cuarentena,* 40 days of focused rest, attention on the child, and family support after birth, which is practiced in some areas of Mexico but not in the US (Sampson et al., 2018). Women also reported that PPD is simply not acknowledged in Mexico and is related to feelings of shame, uselessness and weakness (Sampson et al., 2018). Other relevant beliefs included the belief that suffering is an expected part of motherhood and that symptoms of postpartum depression are anticipated and transient (Sampson et al., 2018). Blackmore and Chaudron's (2013) review of research into cultural beliefs and practices around birth in Latine countries such as Mexico and Guatemala, included a discussion of other cultural postpartum beliefs such as the belief that blood leaving the body leaves the body in a cold state requiring application of warming techniques to restore the balance, which may prevent

depression; the importance of *La Cuarentena* or other confinement practices; and the importance of the establishment of *compadres* (godparents). Furthermore, similar to Sampson et al.'s research (2018), Blackmore and Chaudron (2013) discussed that PPD is considered a weakness, and Latina women are much more likely to express their depressive complaints through the discussion of somatic symptoms or *nervios* ("nerves"). The EPDS, which was used in this study, was designed to remove somatic symptoms associated with depression (e.g., weight changes, disruptions in sleep, breathlessness) as they are a significant and normative part of the pregnancy and infant childrearing experiences (Cox & Holden, 2003). This may be a significant oversight if many women express their depression through identification of physical, somatic symptoms, resulting in the tool potentially being less effective in research and practice with Spanish speaking populations.

It is important to return to the fact that in the current study, while reduction in depressive symptoms and improvement in parenting self-efficacy did not reach statistical significance, reduction in overall reported depressive symptoms occurred, and the percent of women experiencing clinically concerning levels of depression as measured by the EPDS Spanish reduced from 14% to 7%. The Spanish-speaking sample was small (n=42), and demographics were not gathered on immigration status, country or origin, or other variables related to acculturation. However, the results are promising and point to the feasibility and potential clinical benefit of providing ROSE in community clinics and programs with Spanish speaking populations. It is clear that future research into La Luz and the use of the ROSE program in the postpartum period with Spanish speaking populations is warranted. Future research into the best ways to assess for and understand depression in the postpartum period for Spanish speaking US

Latines, Latine immigrants to the US, and women residing in Latino countries is also clearly needed.

Limitations

Several limitations to the current study should be noted. First, sample sizes were not equal between measures, nor between language groups participating in the study. The differences in sample size limit the ability to compare results of statistical significance between groups. For example, while La Luz was found to statistically significantly reduce levels of postpartum depression and the number of women meeting the clinical cutoff for postpartum depression in the full sample, the same was not found for improvements in parenting self-efficacy, despite the fact that effect sizes were similar between depression and PSE.

A second limitation concerns the use of assessment measures in Spanish which were not validated on US Latine populations. As previously discussed, the lack of validation on Spanish speaking US Latines indicates that one cannot be sure that postpartum depression was accurately assessed in our sample. The EPDS could have been assessing for postpartum depression, but it could also have been assessing slightly different constructs or missing important cultural markers of postpartum depression. In addition, participants could have chosen to withhold disclosure of symptoms due to stigma. Of course, this is a limitation with use of self-report measures generally.

A third limitation of the study is that depression and parenting self-efficacy self-reports were only gathered immediately after the intervention, which limits the ability to understand the effectiveness of the intervention later in the postpartum period. We do not know if depression symptoms in our sample continued to remain low or decreased further after applying the

curriculum to their lives, or if the positive results of the intervention did not hold over time. The study would have benefitted from a third time point to assess depression and PSE.

A fourth limitation of the study concerns the lack of a control group. Without a control group, we cannot be sure whether depression scores would have similar decreased, increased, or remained stable across 4 weeks for other postpartum mothers. In addition, women enrolled in La Luz are receiving a package of care interventions while enrolled, including at minimum, the support of a family support coordinator who is available to work with the mother to address life stressors and challenges (e.g., access to baby gear, support applying for childcare assistance, connection to immigration and domestic violence resources and partner organizations). Some of the mothers only received La Luz at Thriving Families, while others had possible prior or concurrent enrollment in MotherWise, Thriving Families' relationship education program. It is possible that this study was assessing the overall impact of participation in the Thriving Families programming across this period of time, rather than the effects of the La Luz program alone. Future research could include comparison of women enrolled in the La Luz version of ROSE at Thriving Families, ROSE programs in the community, and a control group of women not enrolled in an IPT prevention program, to better understand the effects of La Luz.

A fifth limitation of the study is the open criteria for women who could participate. Besides the requirement to be 18 years old, the study had no exclusion criteria. While this is a benefit in some respects, as our participants more accurately represent the full spectrum of women in the postpartum period and their experiences, we are not able to control for the effects of other interventions, such as individual psychotherapy or psychopharmacological interventions.

A final limitation of this study concerns the lack of data reported for participants who chose not to complete the pre and post surveys. Analysis was not completed to explore the

differences between the participants who chose to complete both services and those who completed one or neither. It is possible that women who completed both surveys were more motivated by the compensation associated with the surveys, were more engaged in and impacted by the programming, and attended more groups. However, these speculations cannot be confirmed or denied without exploration into the characteristics of the women who did not choose to complete pre- and post-surveys.

Despite the limitations enumerated above, this study is, to my knowledge, the first study to analyze the impacts of the ROSE curriculum both when implemented in the postpartum period and when administered in Spanish, to Spanish speaking participants. In addition, this study is unique in that it explores the interaction between language of instruction/participants and depression and parenting self-efficacy, and the differences between English and Spanish groups in their reporting. Third, this study is unique in its attempt to explore the impacts of the ROSE prevention program on a secondary variable (parenting self-efficacy) instead of solely focusing on depressive symptom reduction.

Implications for Future Research and Clinical Practice

The ROSE program has already been well-established in various randomized clinical trials as an effective program to prevent postpartum depression for low-income women in rural and urban settings (Crockett et al., 2008; Phipps et al., 2013; Zlotnick et al., 2001, 2006, 2016) when implemented in English. Future research should expand on the initial research conducted in this study on its benefits in preventing or ameliorating postpartum depression when administered in the postpartum period with use of a control group, as the course of depression in the first 12 months postpartum needs to be further examined. Future research should assess the efficacy of this program in the postpartum period with women not already enrolled in supportive

programming such as that at Thriving Families. Furthermore, research on the Spanish language version of the ROSE program is needed in both the prenatal and postpartum period. The Spanish workbook is freely available online (Care New England Health System, 2022) and its efficacy needs to be evaluated beyond the attempt made in this study. Additionally, further studies are needed with similar sample sizes and better control groups to understand the within and between subjects' effects of the program when administered in English and Spanish.

In addition to further quantitative research into the ROSE program and its minor modifications as La Luz, the field would benefit from qualitative research exploring Spanish speaking women's experiences with the program. Topics explored with the participants might include how they describe distress in the postpartum period and whether it is similar or different to how distress is described in the EPDS Spanish version, what culturally relevant postpartum symptoms may be missed in the EPDS and if they were comfortable sharing their feelings in an online survey. Qualitative research into both the women reporting very low depression and clinically significant depression screening scores would be beneficial as well; for those with low scores, it would be important to better understand what factors in their life helped them feel well during this time of postpartum adjustment and why they still chose to participate in a postpartum depression program. For those with the clinically significant scores that reduced to subclinical levels, it would be helpful to explore what about the program helped them to improve, how they felt sharing their symptoms on surveys and in groups, given the cultural stigma of experiencing postpartum depression, and if they felt there were culture-bound expression of symptoms or culturally beneficial supports that were missed in the Spanish language curriculum.

Additionally, future research could explore more deeply the impacts of IPT interventions for Latinas in the US, and the different influences of spoken language, level of acculturation, and

culture and country of origin on expression of symptoms and on outcomes. While the current study explored the differences between effects of the program when implemented in Spanish and English, the English-speaking participants were a very diverse group. This study compared Spanish speaking Latinas with a group of Latina, African American, White, Asian American Pacific Islander, and Native American populations. While this study explored more specifically the impacts of language of instruction, it is important to explore further the interaction between IPT interventions and acculturation, language and cultural practices in the postpartum period. Future research into the perinatal experiences of US Latines could explore the differences in programming with a fully Latine sample, with participants choosing to participate in English or Spanish programs. The many future directions for possible research can help address the questions addressed in this study, including whether less acculturated Latines are less likely to experience PPD, or just less likely to report it.

Regarding the effects of the ROSE program on parenting self-efficacy, the results of this study were inconclusive, demonstrating small but insignificant improvements with already high efficacy scores before intervention. Future research on PSE with ROSE should include an analysis of domain-specific PSE to more completely account for the experiences of parenting specific to the postpartum and infant period. Other studies could also include other measures of PSE that have been validated in Spanish in some settings.

Validation of the EPDS in four Spanish speaking countries is important, and admirable. However, the Spanish version of the EPDS widely available for use in the US and was used in this study has not yet been validated. According to the US Census, the “Hispanic or Latino” population was 62.1 million in 2020 and grew 23% since 2010, while the non-Hispanic population grew only 4.3 percent (Jones et al., 2021). Approximately 43 million individuals

speak Spanish in the home (Funk & Hugo Lopez, 2022). Latines are the fastest growing minority and have the highest birthrate in the US (Blackmore & Chaudron, 2013), and given the increased prevalence of perinatal depression in this group, it is imperative that assessments and interventions are validated with this widely heterogenous population.

The current study also points to the importance of clinics, nonprofits, and therapy practices recruiting staff that speak Spanish or other common languages in their region of practice, so that clinicians can offer participants the ability to choose to engage in therapeutic services in the best language of fit for them. Approximately one third of all participants in this Denver metro area program enrolled in services at Thriving Families chose to join Spanish language groups, demonstrating the salience of these groups and pointing towards the importance of empowering women to receive services in their preferred language. The field of psychology must continue to recruit and train therapists who speak languages other than English, supporting the substantial portion of the population that speak languages other than English in the home.

Lastly, when providing IPT interventions to Latine individuals, it may be important to consider inclusion of adjustment concerns related to acculturation in postpartum depression prevention and treatment. Especially for Latine immigrants, the postpartum period may not only be a period of adjustment to parenting a new child, involving role transitions and grief and loss of previous adult identities, but may also be a period of grief and loss of home communities, family members, and cultural practices and adjusting to a culture with different childrearing expectations, values for mothers, and support systems.

References

Alvarado, R., Jadresic, E., Guajardo, V., & Rojas, G. (2015). First validation of a Spanish translated version of the Edinburgh Postnatal Depression Scale (EPDS) for use in pregnant women A Chilean study. *Archives of Women's Mental Health*, *18*(4), 607–612. https://doi-org.du.idm.oclc.org/10.1007/s00737-014-0466-z

Alvarado-Esquivel, C., Sifuentes-Alvarez, A., Salas-Martinez, C., & Martínez-García, S. (2006). Validation of the Edinburgh Postpartum Depression Scale in a population of puerperal women in Mexico. *Clinical Practice and Epidemiology in Mental Health, 2:*33. https://doi-org.du.idm.oclc.org/10.1186/1745-0179-2-33

Ayón, C., Marsiglia, F. F., & Bermudez-Parsai, M. (2010). Latino family mental health: Exploring the role of discrimination and familismo. *Journal of community psychology*, *38*(6), 742-756. https://doi-org.du.idm.oclc.org/10.1002/jcop.20392

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Banker, J. E., & LaCoursiere, D. Y. (2014). Postpartum depression: Risks, protective factors, and the couple's relationship. *Issues in Mental Health Nursing*, *35*(7), 503–508. https://doi-org.du.idm.oclc.org/10.3109/01612840.2014.888603

Barnes, C. R., & Adamson-Macedo, E. N. (2007). Perceived Maternal Parenting Self-Efficacy (PMP S-E) tool: Development and validation with mothers of hospitalized preterm neonates. *Journal of Advanced Nursing*, *60*(5), 550–560. https://doi-org.du.idm.oclc.org/10.1111/j.1365-2648.2007.04445.x

Beck A. T., Steer R. A., Brown G. K. (1996). *Manual for the Beck Depression Inventory-II*. Psychological Corporation.

Belén Vázquez, M., & Carmen Míguez, M. (2019). Validation of the Edinburgh Postnatal Depression Scale as a screening tool for depression in Spanish pregnant women. *Journal of Affective Disorders*, *246*, 515–521. https://doiorg.du.idm.oclc.org/10.1016/j.jad.2018.12.075

Blackmore, E.R., & Chaudron, L. (2013). Psychosocial and Cultural Considerations in Detecting and Treating Depression in Latina Perinatal Women in the United States. In Lara-Cinisomo, S., & Wisner, K. L. (Eds.), (2013). *Perinatal depression among Spanish speaking and Latin American women: A global perspective on detection and treatment.* (pp. 83-96). Springer Science & Business Media.

Care New England Health System (2022). *The ROSE Program: an evidence-based intervention to prevent postpartum depression.* https://www.womenandinfants.org/rose-program-postpartum-depression

Chaudron, L. H., Kitzman, H. J., Peifer, K. L., Morrow, S., Perez, L. M., & Newman, M. C. (2005a). Prevalence of Maternal Depressive Symptoms in Low-Income Hispanic Women. *The Journal of Clinical Psychiatry*, *66*(4), 418–423. https://doi-org.du.idm.oclc.org/10.4088/JCP.v66n0402

Chaudron, L. H., Kitzman, H. J., Peifer, K. L., Morrow, S., Perez, L. M., & Newman, M. C. (2005b). Self-recognition of and provider response to maternal depressive symptoms in low-income Hispanic women. *Journal of Women's Health, 14*(4), 331–338. https://doi-org.du.idm.oclc.org/10.1089/jwh.2005.14.331

Chen, J., Cross, W. M., Plummer, V., Lam, L., Sun, M., Qin, C., & Tang, S. (2019). The risk factors of antenatal depression: A cross-sectional survey. *Journal of Clinical Nursing*, *28*(19–20), 3599–3609. https://doi-org.du.idm.oclc.org/10.1111/jocn.14955

Chung, G., Smith, Q., Frey, J., & Lanier, P. (2021). Associations between depression and parenting of fathers in Head Start and parental self-efficacy as a protective factor. *Children and Youth Services Review, 280*(39-48). https://doi-org.du.idm.oclc.org/10.1016/j.childyouth.2020.105758

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, *150*, 782-786. https://doi-org.du.idm.oclc.org/10.1192/bjp.150.6.782

Cox, J., & Holden, J. (2003). *Perinatal mental health: A guide to the Edinburgh Postnatal Depression Scale (EPDS)*. Royal College of Psychiatrists.

Crockett, K., Zlotnick, C., Davis, M., Payne, N., & Washington, R. (2008). A depression preventive intervention for rural low-income African-American pregnant women at risk for postpartum depression. *Archives of Women's Mental Health, 11*(5–6), 319–325. https://doi-org.du.idm.oclc.org/10.1007/s00737-008-0036-3

Cuijpers, P., Brannmark, J.G., & van Straten, A. (2008). Psychological treatment of postpartum depression: A meta-analysis. *The Journal of Clinical Psychiatry, 64*, 103–118. https://doi-org.du.idm.oclc.org/10.1002/jclp.20432

Curci, S. G., Luecken, L. J., & Edwards, M. C. (2021). Psychometric properties of the Parenting Sense of Competence Scale among low-income Mexican American mothers. *Journal of Child and Family Studies*, *30*(12), 3121–3130. https://doi-org.du.idm.oclc.org/10.1007/s10826-021-02093-0

Cutrona, C. E., & Troutman, B. R. (1986). Social support, infant temperament, and parenting self-efficacy: A mediational model of postpartum depression. *Child Development*, *57*(6), 1507–1518. https://doi-org.du.idm.oclc.org/10.2307/1130428

Davila, M., McFall, S. L., & Cheng, D. (2009). Acculturation and depressive symptoms among pregnant and postpartum Latinas. *Maternal and Child Health Journal, 13*(3), 318–325. https://doi-org.du.idm.oclc.org/10.1007/s10995-008-0385-6

Diaz, M. A., Le, H. N., Cooper, B. A., & Munoz, R. F. (2007). Interpersonal factors and perinatal depressive symptomatology in a low-income Latina sample. *Cultural Diversity and Ethnic Minority Psychology, 13*(4), 328–336. https://doi-org.du.idm.oclc.org/10.1037/1099-9809.13.4.328

Deans, C., Reay, R., & Buist, A. (2016). Addressing the mother–baby relationship in interpersonal psychotherapy for depression: An overview and case study. *Journal of Reproductive and Infant Psychology*, *34*(5), 483–494. https://doi-org.du.idm.oclc.org/10.1080/02646838.2016.1221502

Dennis, C.-L., Grigoriadis, S., Zupancic, J., Kiss, A., & Ravitz, P. (2020). Telephone-based nurse-delivered interpersonal psychotherapy for postpartum depression: Nationwide randomised controlled trial. *The British Journal of Psychiatry, 216*(4), 189–196. https://doi-org.du.idm.oclc.org/10.1192/bjp.2019.275

Elisei, S., Lucarini, E., Murgia, N., Ferranti, L., & Attademo, L. (2013). Perinatal depression: A study of prevalence and of risk and protective factors. *Psychiatria Danubina*, *25*(Suppl 2), 258–262.

Escobar, J. I., Nervi, C. H., & Gara, M. A. (2000). Immigration and mental health: Mexican Americans in the United States. *Harvard Review of Psychiatry, 8*(2), 64–72. https://doi-org.du.idm.oclc.org/10.1093/hrp/8.2.64

Field, T. (1992). Infants of depressed mothers. *Development and Psychopathology, 4*(1), 49–66.

First, M. B., & Gibbon, M. (2004). The Structured Clinical Interview for DSM-IV Axis I

Disorders (SCID-I) and the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II). In M. J. Hilsenroth & D. L. Segal (Eds.), *Comprehensive handbook of psychological assessment, Vol. 2. Personality assessment* (pp. 134–143). John Wiley & Sons, Inc.

Forman, D.R., O'Hara, M.W., Stuart, S., Gorman, L.L., Larsen, K.E., & Coy, K.C. (2007). Effective Treatment for Postpartum Depression Is Not Sufficient to Improve the Developing Mother–child Relationship. *Development and Psychopathology 19*(2), 585-602. https://doi-org.du.idm.oclc.org/10.1017/S0954579407070289

Fox, M. (2021). Discrimination as a moderator of the effects of acculturation and cultural values on mental health among pregnant and postpartum Latina women. *American Anthropologist*, *123*(4), 780–804. https://doi-org.du.idm.oclc.org/10.1111/aman.13665

Funk, C. and Hugo Lopez, M. (2022, June 14). *A brief statistical portrait of U.S. Hispanics*. Pew Research Center. https://www.pewresearch.org/science/2022/06/14/a-brief-statistical-portrait-of-u-s-hispanics/

Garcia-Esteve, L., Ascaso, C., Ojuel, J., & Navarro, P. (2003). Validation of the Edinburgh Postnatal Depression Scale (EPDS) in Spanish mothers. *Journal of Affective Disorders*, *75*(1), 71–76. https://doi-org.du.idm.oclc.org/10.1016/S0165-0327(02)00020-4

Ghaedrahmati, M., Kazemi, A., Kheirabadi, G., Ebrahimi, A., & Bahrami, M. (2017). Postpartum depression risk factors: A narrative review. *Journal of education and health promotion*, *6*, 1-7.

Giallo, R., Cooklin, A., & Nicholson, J. M. (2014). Risk factors associated with trajectories of

mothers' depressive symptoms across the early parenting period: An Australian population-based longitudinal study. *Archives of Women's Mental Health, 17*(2), 115–125. https://doi-org.du.idm.oclc.org/10.1007/s00737-014-0411-1

Goodman, J. H. (2004). Postpartum depression beyond the early postpartum period. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *33*(4), 410-420.

Goodman, S. H., Simon, H., McCarthy, L., Ziegler, J., & Ceballos, A. (2022). Testing models of associations between depression and parenting self-efficacy in mothers: A meta-analytic review. *Clinical Child and Family Psychology Review, 25,* 471-499. https://doi-org.du.idm.oclc.org/10.1007/s10567-022-00398-0

Grote, N. K., Swartz, H. A., Geibel, S. L., Zuckoff, A., Houck, P. R., & Frank, E. (2009). A randomized controlled trial of culturally relevant, brief interpersonal psychotherapy for perinatal depression. *Psychiatric Services*, *60*(3), 313–321. https://doi-org.du.idm.oclc.org/10.1176/appi.ps.60.3.313

Halbreich, U., & Karkun, S. (2006). Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *Journal of Affective Disorders*, *91*(2–3), 97–111. https://doi-org.du.idm.oclc.org/10.1016/j.jad.2005.12.051

Hamilton M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, and Psychiatry, 23*, 56–62. https://doi.org/10.1136/jnnp.23.1.56

Handley, E. D., Michl-Petzing, L. C., Rogosch, F. A., Cicchetti, D., & Toth, S. L. (2017). Developmental cascade effects of interpersonal psychotherapy for depressed mothers: Longitudinal associations with toddler attachment, temperament, and maternal parenting efficacy. *Development and Psychopathology, 29*(2), 601–615. https://doi-org.du.idm.oclc.org/10.1017/S0954579417000219

Heilemann, M., Frutos, L., Lee, K., & Kury, F. S. (2004). Protective strength factors, resources, and risks in relation to depressive symptoms among childbearing women of Mexican descent. *Health Care for Women International, 25*(1), 88–106. https://doi-org.du.idm.oclc.org/10.1080/07399330490253265

Hobfoll, S. E., Ritter, C., Lavin, J., Hulsizer, M. R., & Cameron, R. P. (1995). Depression Prevalence and incidence among inner-city pregnant and postpartum women. *Journal of Consulting and Clinical Psychology, 63*(3), 445–453. https://doi-org.du.idm.oclc.org/10.1037/0022-006X.63.3.445

Howell, E.A., Mora, P., & Leventhal, H. (2006). Correlates of early postpartum depression symptoms. *Maternal and Child Health Journal, 10*(2), 149-157. https://doi.org/10.1007/s10995-005-0048-9

Johnston, C., & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, *18*(2), 167–175. https://doi-org.du.idm.oclc.org/10.1207/s15374424jccp1802_8

Jones, N., Marks, R., Ramirez, R., & Ríos-Vargas, M. (2021, August 12). *2020 Census Illuminates Racial and Ethnic Composition of the Country*. United States Census Bureau. https://www.census.gov/library/stories/2021/08/improved-race-ethnicity-measures-reveal-united-states-population-much-more-multiracial.html

Klerman G. L., Weissman, M. M., Rounsaville, B. J., & Chevron, E. (1984) *Interpersonal Psychotherapy of Depression.* Basic Books; New York.

Kunseler, F. C., Willemen, A. M., Oosterman, M., & Schuengel, C. (2014). Changes in parenting self-efficacy and mood symptoms in the transition to parenthood: A bidirectional

association. *Parenting: Science and Practice*, *14*, 215-234. https://doi.org/10.1080/15295192.2014.972758

Kuo, W. H., Wilson, T. E., Holman, S., Fuentes-Affl ick, E., O'Sullivan, M. J., & Minkoff, H. (2004). Depressive symptoms in the immediate postpartum period among Hispanic women in three U.S. cities. *Journal of Immigrant Health, 6*(4), 145–153. https://doi-org.du.idm.oclc.org/10.1023/B:JOIH.0000045252.10412.fa

Lara, M. A., Le, H.-N., Letechipia, G., & Hochhausen, L. (2009). Prenatal depression in Latinas in the US and Mexico. *Maternal and Child Health Journal*, *13*(4), 567–576. https://doi-org.du.idm.oclc.org/10.1007/s10995-008-0379-4

Lara-Cinisomo, S., Wood, J., & Fujimoto, E. M. (2019). A systematic review of cultural orientation and perinatal depression in Latina women: Are acculturation, Marianismo, and religiosity risks or protective factors? *Archives of Women's Mental Health*, *22*(5), 557–567. https://doi-org.du.idm.oclc.org/10.1007/s00737-018-0920-4

Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2011). First-time mothers: social support, maternal parental self-efficacy and postnatal depression. *Journal of Clinical Nursing, 21,* 288-297. https://doi.org/10.1111/j.1365-2702.2011.03701.x

Lenze, S. N., Rodgers, J., & Luby, J. (2015). A pilot, exploratory report on dyadic interpersonal psychotherapy for perinatal depression. *Archives of Women's Mental Health*, *18*(3), 485–491. https://doi-org.du.idm.oclc.org/10.1007/s00737-015-0503-6

Mennen, F. E., Molina, A. P., Monro, W. L., Duan, L., Stuart, S., & Sosna, T. (2021). Effectiveness of an Interpersonal Psychotherapy (IPT) Group Depression Treatment for Head Start Mothers: A Cluster-Randomized Controlled Trial. *Journal of Affective Disorders, 280*, 39-48. https://doi-org.du.idm.oclc.org/10.1016/j.jad.2020.11.074

Miniati, M., Callari, A., Calugi, S., Rucci, P., Savino, M., Mauri, M., & Dell'Osso, L. (2014). Interpersonal psychotherapy for postpartum depression: A systematic review. *Archives of Women's Mental Health, 17*(4), 257–268. https://doi-org.du.idm.oclc.org/10.1007/s00737-014-0442-7

Miranda, J., Chung, J. Y., Green, B. L., Krupnick, J., Siddique, J., Revicki, D. A., et al. (2003). Treating depression in predominantly low-income young, minority women. A randomized controlled trial. *JAMA: Journal of the American Medical Association, 29*(1), 57–65. https://doi-org.du.idm.oclc.org/10.1001/jama.290.1.57

Moran, T. E., Polanin, J. R., Evenson, A. L., Troutman, B. R., & Franklin, C. L. (2016). Initial validation of the assessment of parenting tool: A task-and domain-level measure of parenting self-efficacy for parents of infants from birth to 24 months of age. *Infant Mental Health Journal, 37*(3), 222–234. https://doi-org.du.idm.oclc.org/10.1002/imhj.21567

Mulcahy, R., Reay, R. E., Wilkinson, R. B., & Owen, C. (2010). A randomised control trial for the effectiveness of group interpersonal psychotherapy for postnatal depression. *Archives of Women's Mental Health, 13*(2), 125–139. https://doi-org.du.idm.oclc.org/10.1007/s00737-009-0101-6

Munk-Olsen, T., Laursen, T. M., Pedersen, C. B., Mors, O., & Mortensen, P. B. (2006). New Parents and Mental Disorders: A Population-Based Register Study. *JAMA: Journal of the American Medical Association, 296*(21), 2582–2589. https://doi-org.du.idm.oclc.org/10.1001/jama.296.21.2582

Muñoz, R. F., Le, H., Ippen, C. G., Diaz, M. A., Urizar, G. G., Soto, J., et al. (2007). Prevention

of postpartum depression in low-income women: Development of the Mamás y Bebés/mothers and babies course. *Cognitive and Behavioral Practice, 14*, 70–83. https://doi-org.du.idm.oclc.org/10.1016/j.cbpra.2006.04.021

Murray, L., Arteche, A., Fearon, P., Halligan, S., Croudace, T., & Cooper, P. (2010). The effects of maternal postnatal depression and child sex on academic performance at age 16 years: A developmental approach. *Journal of Child Psychology and Psychiatry*, *51*(10), 1150–1159. https://doi-org.du.idm.oclc.org/10.1111/j.1469-7610.2010.02259.x

Nylen, K. J., Moran, T. E., Franklin, C. L., & O'Hara, M. W. (2006). Maternal depression: A review of relevant treatment approaches for mothers and infants. *Infant Mental Health Journal, 27*(4), 327–343. https://doi-org.du.idm.oclc.org/10.1002/imhj.20095

Oltra, B. P., Cano, C. A., Oliver, R. A., Cabrero, G. J., & Richart, M. M. (2020). Spanish version of the Parenting Sense of Competence scale: Evidence of reliability and validity. *Child & Family Social Work*, *25*(2), 373–383. https://doi-org.du.idm.oclc.org/10.1111/cfs.12693

Pearlstein, T., Howard, M., Salisbury, A., & Zlotnick, C. (2009). Postpartum depression. *American journal of obstetrics and gynecology, 200*(4), 357-364.

Phipps, M. G., Raker, C. A., Ware, C. F., & Zlotnick, C. (2013). Randomized controlled trial to prevent postpartum depression in adolescent mothers. *American Journal of Obstetrics and Gynecology, 208*(3), 192.e1-192.e6. https://doi.org/10.1016/j.ajog.2012.12.036

Porter, C.L. & Shu, H. (2003). First-time mothers' perceptions of efficacy during the transition to motherhood: Links to infant temperament. *Journal of Family Psychology, 17*(1), 54-64. http://doi.org/ 10.1037/0893-3200.17.1.54

Posmontier, B., Bina, R., Glasser, S., Cinamon, T., Styr, B., & Sammarco, T. (2019).

Incorporating interpersonal psychotherapy for postpartum depression into social work practice in Israel. *Research on Social Work Practice, 29*(1), 61–68. https://doi-org.du.idm.oclc.org/10.1177/1049731517707057

Rich-Edwards, J. W., Kleinman, K., Abrams, A., Harlow, B. L., McLaughlin, T. J., Joffe, H., & Gillman, M. W. (2006). Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *Journal of Epidemiology and Community Health*, *60*(3), 221–227. https://doi-org.du.idm.oclc.org/10.1136/jech.2005.039370

Rigato, S., Stets, M., Bonneville-Roussy, A., & Holmboe, K. (2020). Impact of maternal depressive symptoms on the development of infant temperament: Cascading effects during the first year of life. *Social Development*, *29*(4), 1115-1133. https://doi-org.du.idm.oclc.org/10.1111/sode.12448

Robertson, E., Grace, S., Wallington, T., & Stewart, D. E. (2004). Antenatal risk factors for Postpartum depression: A synthesis of recent literature. *General Hospital Psychiatry, 26*(4), 289–295. https://doi-org.du.idm.oclc.org/10.1016/j.genhosppsych.2004.02.006

Sampson, M., Torres, M. I. M., Duron, J., & Davidson, M. (2018). Latina immigrants' cultural beliefs about postpartum depression. *Affilia: Journal of Women & Social Work*, *33*(2), 208–220. https://doi-org.du.idm.oclc.org/10.1177/0886109917738745

Smith-Nielsen, J., Tharner, A., Krogh, M. T., & Vaever, M. S. (2016). Effects of maternal postpartum depression in a well-resourced sample: Early concurrent and long-term effects on infant cognitive, language, and motor development. *Scandinavian journal of psychology*, *57*(6), 571-583. https://doi-org.du.idm.oclc.org/10.1111/sjop.12321

Sockel, L., Epperson, C.N., & Barber, J. (2011). A meta analysis of treatments for perinatal

depression. *Clinical Psychology Review, 31*, 839–849. https://doi-org.du.idm.oclc.org/10.1016/j.cpr.2011.03.009

Spinelli, M. G., & Endicott, J. (2003). Controlled clinical trial of interpersonal therapy versus parenting education program for depressed pregnant women. *The American Journal of Psychiatry, 160*, 555–562.

Spinelli, M. G., Endicott, J., Leon, A. C., Goetz, R. R., Kalish, R. B., Brustman, L. E., Carmona, Y. R., Meyreles, Q., Vega, M., & Schulick, J. L. (2013). A controlled clinical treatment trial of interpersonal psychotherapy for depressed pregnant women at 3 New York City sites. *The Journal of Clinical Psychiatry, 74*(4), 393–399. https://doi-org.du.idm.oclc.org/10.4088/JCP.12m07909

Stern, D.N. (2005). The motherhood constellation: Therapeutic approaches to early relational problems. In A. J. Sameroff, S. C. McDonough, & K. L. Rosenblum (Eds.), *Treating parent-infant relationship problems: Strategies for intervention* (pp. 29-42). The Guilford Press.

Stuart, S. (2012). Interpersonal psychotherapy for postpartum depression. *Clinical Psychology & Psychotherapy, 19*(2), 134–140. https://doi-org.du.idm.oclc.org/10.1002/cpp.1778

Stuart, S., & Robertson, M. (2012). *Interpersonal psychotherapy: A clinician's guide*. (2nd ed.). Hodder Arnold.

Teti, D.M., & Gelfand, D.M. (1991). Behavioral competence among mothers of infants in the first year: the mediational role of maternal self-efficacy. *Child Development, 62*(5), 918-929. https://doi.org/10.1111/j.1467-8624.1991.tb01580.x

Vargas-Porras, C., Roa-Díaz, Z. M., Barnes, C., Adamson-Macedo, E. N., Ferré-Grau, C., & De

Molina-Fernández, M. I. (2020). Psychometric properties of the Spanish Version of the Perceived Maternal Parenting Self-Efficacy (PMP S-E) tool for primiparous women. *Maternal and Child Health Journal*, *24*(5), 537–545. https://doi-org.du.idm.oclc.org/10.1007/s10995-019-02860-y

Vega-Dienstmaier, J. M., Mazzotti Suarez, G., & Campos Sanchez, M. (2002). Validación de una versión en español de la Escala de Depresión Postnatal de Edimburgo. *Actas Españolas de Psiquiatría*, *30*(2), 106-111.

Verhage, M. L., Oosterman, M., & Schuengel, C. (2013). Parenting self-efficacy predicts perceptions of infant negative temperament characteristics, not vice versa. *Journal of Family Psychology, 27*(5), 844–849. https://doi-org.du.idm.oclc.org/10.1037/a0034263

Wang, Z., Liu, J., Shuai, H., Cai, Z., Fu, X., Liu, Y., Xiao, X., Zhang, W., Krabbendam, E., Liu, S., Liu, Z., Li, Z & Yang, B. X. (2021). Mapping global prevalence of depression among postpartum women. *Translational psychiatry, 11*(1), 543. https://doi.org/10.1038/s41398-021-01663-6

Wernand, J.J., Kunseler, F.C., Oosterman, M., Beekman, A.T.F., & Scheungel, C. (2014). Prenatal changes in self-efficacy: Linkages with anxiety and depressive symptoms in primiparous women. *Infant Mental Health Journal, 35*(1), 42-50. https://doi.org/10.1002/imhj.21425

Wittkowski, A., Garrett, C., Calam, R., & Weisberg, D. (2017). Self-report measures of parental self-efficacy: A systematic review of the current literature. *Journal of Child and Family Studies, 26*(11), 2960–2978. https://doi-org.du.idm.oclc.org/10.1007/s10826-017-0830-5

Yang, Z., & Williams, N. A. (2021). Parenting self-efficacy mediates the association between

Chinese parents' depression symptoms and their young children's social and emotional competence. *Journal of Child and Family Studies, 30,* 1261–1274. https://doi-org.du.idm.oclc.org/10.1007/s10826-021-01930-6

Yonkers, K. A., Ramin, S. M., Rush, A. J., Navarrete, C. A., Carmody, T., March, D., Heartwell, S. F., & Leveno, K. J. (2001). Onset and persistence of postpartum depression in an inner-city maternal health clinic system. *The American Journal of Psychiatry, 158*(11), 1856–1863. https://doi-org.du.idm.oclc.org/10.1176/appi.ajp.158.11.1856

Zayas, L. H., Cunningham, M., McKee, M. D., & Jankowski, K. R. B. (2002). Depression and negative life events among pregnant African American and Hispanic women. *Women's Health Issues, 12*(1), 16–22.

Zayas, L.H., & Sampson, M. (2013). Perinatal depression treatments for US Latinas: A review of research findings. In Lara-Cinisomo, S., & Wisner, K. L. (Eds.), (2013). *Perinatal depression among Spanish speaking and Latin American women: A global perspective on detection and treatment*. (pp. 65-82). Springer Science & Business Media.

Zlotnick, C., Johnson, S. L., Miller, I. W., Pearlstein, T., & Howard, M. (2001). Postpartum Depression in Women Receiving Public Assistance: Pilot Study of an Interpersonal-Therapy-Oriented Group Intervention. *American Journal of Psychiatry, 158*(4), 638–640. https://doi.org/10.1176/appi.ajp.158.4.638

Zlotnick, C., Tzilos, G., Miller, I., Seifer, R., & Stout, R. (2016). Randomized controlled trial to prevent postpartum depression in mothers on public assistance. *Journal of Affective Disorders, 189*, 263–268. https://doi-org.du.idm.oclc.org/10.1016/j.jad.2015.09.059

Zlotnick, C., Miller, I. W., Pearlstein, T., Howard, M., & Sweeney, P. (2006). A preventive

intervention for pregnant women on public assistance at risk for postpartum depression. *American Journal of Psychiatry, 163*(8), 1443-1445.

Appendix

Table 1
Characteristics of the overall study sample (n=190)

Variable	n%
Race/Ethnicity	
Hispanic or Latino	62
African American or Black	21
American Indian, Native American or Alaska Native	08
Asian, Pacific Islander, or Native Hawaiian	05
Caucasian or White	17
Other	07
Birth Complications	26
Employment Status	
Full-time (35+ hrs/wk)	11.1
Part-time (1-34 hrs/wk)	4.2
Employed, # of hrs changes weekly	3.7
Temporary, occasional, seasonal or odd-jobs	3.7
Not currently employed	77.4
Income over last 30 days	
Less than $500	69.6
$500-1,000	16.9
$1,001-$2,000	10.1
$2,001-$3,000	2.0
$3,001-$5,000	0.7
More than $5,000	0.7
Education Level	
No degree or diploma	19.4
High school GED or equivalent	11.8
High school diploma	24.7
Vocational/technical certification	10.2
Some college but no degree	19.4
Associate's degree	7.5
Bachelor's degree	5.4
Master's degree/advanced degree	1.6

Table 2: *Changes in Depression and Parenting Self-Efficacy Symptoms Before and After La Luz IPT Intervention for full sample*

Measure (n)	*Mean*	*SD*	*p*	*Cohen's d*
EPDS total (n=140)				
Pre-intervention	5.74	5.67		
Post-intervention	4.84	5.10	.021	.198
EPDS cutoff 10 (n=140)				
Pre-intervention	.22	.42		

Post-intervention	.15	.36	.041	.175
APT-DG (n=98)				
Pre-intervention	53.40	5.92		
Post-intervention	54.20	5.45	.151	.158

Table 3: *Mixed ANOVA Interaction Effects and Between-Subjects Effects of Intervention (T1 to T2) and Program Language on Reported Depression and Parenting Self-Efficacy Beliefs*

Test of Within-Subjects Effects

Measure	Variables	*df*	*F*	Sign.
Depression	Intervention(T1-T2) *Program Language	1, 138	2.97	$p = .087$
PSE	Intervention(T1-T2) *Program Language	1, 82	.565	$p = .454$

Test of Between-Subjects Effects

Measure	Variables	*df*	*F*	*Sign.*
Depression	Program Language	1, 138	7.79	$p = .006$
PSE	Program Language	1, 82	.780	$p = .380$

Table 4: *Post Hoc Analysis of Changes in Depression and Parenting Self-Efficacy Symptoms Before and After La Luz IPT Intervention, split by program language*

Measure (n)	English Cohort (n = 98)			
	Mean	*SD*	*p*	*Cohen's d*
EPDS total (n=98)				
Pre-intervention	6.61	5.89		
Post-intervention	5.44	5.16	.010	.266
EPDS cutoff 10 (n=98)				
Pre-intervention	.26	.44		
Post-intervention	.18	.39	.090	.173
APT-DG (n=59)				
Pre-intervention	52.95	6.36		
Post-intervention	54.02	5.59	.124	.203
	Spanish Cohort (n = 42)			
EPDS total (n=42)				
Pre-intervention	3.71	4.59		
Post-intervention	3.43	4.74	.712	.057
EPDS cutoff 10 (n=42)				
Pre-intervention	.14	.35		
Post-intervention	.07	.26	.262	.176
APT-DG (n=25)				
Pre-intervention	54.48	4.67		
Post-intervention	54.64	5.20	.862	.035

Table 5: *Characteristics of the study sample (n=190) split by program language*

Variable (n%)	Spanish % (n=56)	English % (n=134)
Race/Ethnicity		
Hispanic or Latino	93	49
African American or Black	00	29
American Indian, Native American, or Alaska Native	02	11
Asian, Pacific Islander, or Native Hawaiian	00	07
Caucasian or White	00	24
Other	05	07
Employment Status		
Full-time (35+ hrs/wk)	1.8	14.9
Part-time (1-34 hrs/wk)	1.8	5.2
Employed, # of hrs changes weekly	3.6	3.7
Temporary, occasional, seasonal or odd jobs	1.8	4.5
Not currently employed	91.1	71.6
Income over last 30 days		
Less than $500	80	66.9
$500-1,000	10	18.6
$1,001-$2,000	3.3	12.6
$2,001-$3,000	3.3	1.7
$3,001-$5,000	3.3	0
More than $5,000	3.3	0
Education Level		
No degree or diploma	32.7	14.2
High school GED or equivalent	5.8	14.2
High school diploma	28.8	23.1
Vocational/technical certification	11.5	9.7
Some college but no degree	7.7	23.9
Associate's degree	11.5	6.0
Bachelor's degree	1.9	6.7
Master's degree/advanced degree	0	2.2