

The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Doctoral Dissertations

All Theses, Dissertations, Capstones and
Projects

Fall 8-31-2023

The Effects of Acculturation, Marianismo, and Religiosity on Pregnancy Related Anxiety in Latina Women

Jennifer M. Zanolli
University of San Francisco

Follow this and additional works at: <https://repository.usfca.edu/diss>



Part of the [Clinical Psychology Commons](#)

Recommended Citation

Zanolli, J. M. (2023). The Effects of Acculturation, Marianismo, and Religiosity on Pregnancy Related Anxiety in Latina Women. Retrieved from <https://repository.usfca.edu/diss/630>

This Dissertation is brought to you for free and open access by the All Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Doctoral Dissertations by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Psychology

College of Arts and Sciences

Spring 5-11-2021

The Effects of Acculturation, Religiosity, and Marianismo on Pregnancy Related Anxiety in Latina Women

Jennifer M. Zanolli

Follow this and additional works at: <https://repository.usfca.edu/psyc>



Part of the [Clinical Psychology Commons](#), [Developmental Psychology Commons](#), [Health Psychology Commons](#), and the [Multicultural Psychology Commons](#)

THE EFFECTS OF ACCULTURATION, RELIGIOSITY, AND MARIANISMO ON
PREGNANCY RELATED ANXIETY IN LATINA WOMEN

A Clinical Dissertation Presented to

The University of San Francisco
School of Nursing and Health Professions
Department of Health Professions
Clinical Psychology PsyD Program

In Partial Fulfillment of the Requirements for the Degree

Doctor of Psychology

By


Jennifer M. Zanolli

May, 2021

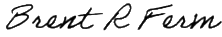


August, 2021

PsyD Clinical Dissertation Signature Page

This Clinical Dissertation, written under the direction of the student's Clinical Dissertation Chair and Committee and approved by Members of the Committee, has been presented to and accepted by the faculty of the Clinical Psychology PsyD Program in partial fulfillment of the requirements for the degree of Doctor of Psychology. The content and research methodologies presented in this work represent the work of the student alone.

	Student Signature	
_____		8/30/21
Student		Date

Clinical Dissertation Committee Member Signatures

		8/23/21
_____		_____
Committee Chair		Date
		8-29-21
_____		_____
Committee Member		Date
		8/30/21
_____		_____
Committee Member		Date
_____		_____
Committee Member (if applicable)		Date

Administrator Signatures



		8/30/21
_____		_____
Program Director, Clinical Psychology PsyD Program		Date
		9/2/2021
_____		_____
Dean, School of Nursing and Health Professions		Date

Table of Contents

Dedication 6

Abstract 7

Chapter 1 9

Introduction..... 9

 Statement of the Problem..... 9

 Definition of Terms..... 10

Chapter 2..... 15

Literature Review..... 15

 Biopsychosocial Theory..... 15

 The Biopsychosocial Model Alongside the Womb Environment 17

 PRA vs. Generalized Anxiety Disorder 18

 Prenatal Experience During Global Pandemic 19

 Adverse Birth Outcomes Associated with Prenatal Anxiety 20

 Obstetric Concerns and Birth Outcomes..... 20

 Adverse Socioemotional, Physical and Neurological Development in the Infant..... 21

 Maternal Psychological Health Concerns and Relationship with Infant 22

 PRA Factors in Latinas 23

 Acculturation..... 24

 Religiosity 26

Marianismo	27
Latina Women and Prenatal Healthcare	29
Relationship Between Pregnant Latina Women and Their Prenatal Healthcare Provider....	31
Parity	32
COVID-19.....	33
The Present Study	34
Research Questions.....	36
Chapter 3.....	38
Method	38
Study Design.....	38
Participants.....	38
Institutional Review Board (IRB) Approval.....	41
Participant Recruitment	41
Measures	43
Eligibility Questionnaire.....	43
Demographic Questionnaire	43
Coronavirus pandemic 2019 (COVID-19).....	43
Pregnancy-Related Anxiety Questionnaire-Revised (PRAQ-R)	43
Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)	44
Marianismo Beliefs Scale (MBS).....	45

The Santa Clara Strength of Religious Faith Questionnaire (SCSORF) 46

Mothers on Respect index (MOR)..... 46

Data Analysis Plan..... 47

 Data Cleaning..... 47

 Data Analysis 48

Chapter 4..... 52

Results..... 52

 Univariate Analysis..... 52

 Bivariate Analysis..... 53

 Research Question 1: Of acculturation, religiosity, and marianismo, which factor predicts the greatest variance in PRA in Latina women aged 18 and up? 54

 Research Question 2: What is the relationship between the number of pregnancies and PRA? 55

 Research Question 3: What is the relationship between the interaction Latina women have with their primary care provider and/or midwife (partera) and PRA?..... 57

 Supplemental Qualitative Research Question: What are the experiences and feelings that Latina women have about their pregnancy during the COVID-19 pandemic? 57

Chapter 5..... 60

Discussion..... 60

 Factors Contributing to Variance in PRA..... 61

 Acculturation..... 61

Religiosity	63
Marianismo	63
Parity	64
Relationship with Prenatal Healthcare Provider	65
COVID-19.....	66
Limitations	67
Future Research	67
References.....	70

Dedication

To my four sons, who have enriched my life by teaching me the meaning of love.

“In a world of changing opportunities, mothers can no longer afford to be treated as selfless vehicles for nurturing and gratification of their offspring as advocated in the past, nor should they agree to be scapegoated as the cause of all their children’s present and future difficulties. If we are to grasp our own experience, I believe we women can no longer be framed within a masculine model but must respond to the growing urge to take ourselves seriously – by listening to our inner voices, and speaking out our own truths and desires grounded in our unique ‘psycho-bio-social’ vicissitudes.”

- Joan Raphael-Leff, 1993

Abstract

There is a dearth of information about pregnancy related anxiety (PRA) in Latina women, yet a growing body of literature demonstrates adverse birth outcomes for mother and infant due to PRA. This study examined the association between acculturation, religiosity, and marianismo with PRA in Latina women aged 18 and above. Further, parity and a Latina pregnant woman's relationship with her health care provider were examined. Acculturation was expected to be the more robust factor with higher levels of PRA than religiosity or marianismo. It was also expected that a higher quality relationship between the woman and her health care provider and multiparity would correlate with lower scores of PRA.

Participants in this study ($n = 53$) were Hispanic, Chicano, Latino or had a Latin or Spanish heritage, over the age of 18, pregnant at the time of the survey, English or Spanish language speaking, and experienced varying parity (number of pregnancies), and English or Spanish language speaking. Participants were recruited through email and asked to participate in an online survey offered in either the English or Spanish language based on participant preference.

A hierarchical regression assessed the contribution of acculturation, religiosity, and marianismo on PRA. A t-test examined the impact of parity on PRA. A Pearson r was conducted to examine the relationship between a pregnant Latina woman and her health care provider associated with PRA. Results showed that acculturation accounted for 15.4% of the variance in PRA and was the only statistically significant predictor of PRA. Lastly, results of how participants described their perinatal experience produced five overarching themes: a) fear associated with the health of the individual and baby, b) fear of exposure to COVID-19, c) worry

about being able to adequately prepare the home for baby, d) anxiety associated with perinatal pain, and e) fear and loneliness attending doctor's visits independently.

The results of this study showed the presence of PRA amongst Latina pregnant women with a larger amount of variance accounted for by acculturation when compared with religiosity and marianismo. With these results in mind, culturally sensitive and timely assessments of Latina pregnant women's mental health should be considered early in the prenatal period. Implementing early assessments may detect and reduce PRA symptoms and promote improved birth outcomes for mother and babies through appropriate treatment.

Chapter 1

Introduction

Statement of the Problem

Pregnancy related anxiety amongst women worldwide is rising and associates with adverse birth outcomes for mother and infant (Goodman et al., 2014; Madhavanprabhakaran et al., 2015). Because a pregnant woman provides the environment for a developing fetus, psychological alterations or mental disorders may further affect the fetus (Huizink et al., 2004). Research shows that preterm birth (PTB), low birth weight (LBW), and intrauterine growth restriction (IUGR) are the leading causes of neonatal, infant, and childhood morbidity, mortality and neurodevelopmental impairments and disabilities worldwide (Field, 2017; Grote et al., 2010; March of Dimes, 1999 & 2000 editions; Swamy et al., 2008; Wilson-Costello et al., Friedman, 2005; World Health Organization [WHO], 1995).

PRA is a contextually tied state of anxiety characterized by pregnancy specific fears and worries such as childbirth, well-being of the mother and baby, as well as impending motherhood (Brunton et al., 2019). Additional fears include worry or distress about the developing child's health, changes in appearance, labor and birth, and future parenting concerns (Blackmore et al., 2016). Specific factors and level of PRA vary from woman to woman and are thought to be predictors of adverse birth outcomes (Madhavanprabhakaran et al., 2015). PRA is distinctly different from general anxiety experienced during pregnancy. Although symptomology may present similarly, underlying etiology is markedly different and may require suitable diagnoses and treatment. Bayrampour et al (2016) suggested PRA may constitute a discrete entity that other common mental health issues do not fully capture.

Latinas are the largest and fastest growing ethnic group in the United States (Ennis et al., 2011; Krogstad & Lopez, 2014) with the percentage of Latina women of childbearing age predicted to increase by 92% by 2050. Moreover, Latina women comprise the largest minority group in the United States with fertility rates 30–40% higher than any other ethnic group (Hamilton et al., 2005; US Census Bureau 2011). Although limited, the available evidence demonstrating that Latinas may experience high levels of PRA is noteworthy because of the implications for poor birth outcomes (Ramos et al., 2019) with few known or understood etiological factors.

Barcelona de Mendoza et al (2016) conducted a literature review on pregnancy anxiety among Latina women that primarily focused on acculturative factors, and the results were mixed. Three studies found no association (Campos et al., 2007, 2008; Engle et al., 1990): one study found that higher acculturated women had lower PRA (Fleuriet & Sunil, 2014): and two studies found that higher acculturation was associated with increased anxiety (Ruiz et al., 2012; Zambrana et al., 1997). Many scholars have identified other culturally relevant factors associated with PRA among Latina women, including religiosity, cultural values, socioeconomic stress, perceived discrimination, attitude toward pregnancy, and comfort with one's primary doctor (Campos et al., 2008; Fleuriet & Sunil, 2014; Magaña & Clark, 1995). Researchers must keep in mind that significant within-group variation can occur when conducting research, and the same factors do not equally impact all Latinas (Campos et al., 2008).

Definition of Terms

Acculturation. Perez-Escamilla & Putnik (2007) stated that acculturation is a multidirectional and multidimensional process encompassing behaviors, attitudes, norms, and values of a new culture. The level of acculturation extends beyond language use and preference,

may not be constant across dimensions, and may differ across settings (i.e., home, work, social). The acculturation process of Latinos within the United States may involve giving up completely their Latino heritage and totally assimilating into the European American mainstream culture (i.e., the “melting pot” concept), retaining their Latino heritage at while also fully integrating into the mainstream culture (i.e., becoming “integrated” or “bicultural”), retaining their Latino heritage without attempting to integrate into the mainstream culture (i.e., becoming “separated” or “segregated”), or losing their Latino heritage without seeking integration into the mainstream society (i.e. become “invisible” or “marginalized”. Perez-Escamilla & Putnik, 2007).

Birth Attendant. The term birth attendant indicates a type of healthcare professional present during birth and delivery of a newborn infant and includes a certified nurse midwife, midwife/partera, obstetrician, family doctor, general practitioner, internist or other physicians (Declercq et al., 2019). A partera is the Spanish word for midwife, referring to one who specializes in childbirth who may or may not offer prenatal care (Ortiz, 2005).

Generalized Anxiety Disorder. *The Diagnostic and Statistical Manual of Mental Disorders* (5th edition; DSM-5; American Psychiatric Association [APA] 2013) criteria for general anxiety disorder includes excessive anxiety and worry (apprehensive expectation), occurring more days than not for a minimum of 6 months about a number of events or activities (such as work or school performance), difficulty controlling the worry, and an association with at least three of the following symptoms: restlessness, easily fatigued, difficulty concentrating, irritability, muscle tension or sleep disturbance (APA, 2013).

IUGR. IUGR is the rate of fetal growth below normal compared to the growth potential of a specific infant as per the race and gender of the fetus (Sharma et al., 2016). IUGR has also been described as a deviation from or a reduction in an expected fetal growth pattern and is

usually the result of innate reduced growth potential or multiple adverse effects on the fetus (Sharma et al., 2016). The term IUGR and small for gestational age (SGA) have been used interchangeably in the medical literature with IUGR used as a clinical definition applying to neonates born with clinical features of malnutrition and in-utero growth retardation, irrespective of their birth weight percentile. The use of SGA relies on the cross-sectional evaluation (either prenatal or postnatal), and the definition considers only the birth weight without any consideration of the in-utero growth and physical characteristics at birth (Sharma et al., 2016; Sharma et al., 2016).

Latina/Hispanic. Latinas are defined as women who trace their lineage to Latin America or Spanish-speaking Latin-American countries (e.g., Cuba, Mexico, Puerto Rico, and South and Central America) or cultures, and who self-identify as Latina or Hispanic regardless of race (Humes et al., 2011; Kim & Dee 2017; Lopez et al., 2013). For the purposes of this study, women who self-identify as either “Latina,” “Hispanic,” “Chicana,” or have origins in a Latin-American country were eligible for participation.

LBW and related terms. The WHO (2004) defines LBW as a birth weight of less than 2,500 g (up to and including 2499 g). LBW is further categorized into very low birth weight (VLBW, <1500 g), and extremely low birth weight (ELBW, <1000 g: WHO, 2004).

Major Depressive Disorder. The DSM-5’s (APA, 2013) criteria for major depression requires five or more symptoms to be present for at least 2 weeks with one symptom being depressed mood or loss of interest or pleasure, and a marked change from previous functioning with one symptom being depressed mood or loss of interest or pleasure. There is a specifier for major depressive disorder with peripartum onset. This specifier can be applied to the current or -

if full criteria are not met for a major depressive episode - most recent episode if the onset of mood symptoms occurs during pregnancy or in the 4 weeks following delivery (APA, 2013).

Marianismo. The term marianismo originated from the work of political scientist Evelyn Stevens (Evelyn & Pescatello, 1973). Stevens intended to bring attention to both negative and positive idealized beliefs regarding the expectation of Latina women's subordinate position in Latin America and to describe the culture's idealized belief of Latina gender role expectations (Castillo et al., 2010). Characteristics that comprise this construct include adherence to gender specific behaviors representative of Latino culture (i.e., providing physical and emotional support to the family, bearing and raising children, taking care of the house), familial expectations (i.e., avoiding sexual shame, obeying the husband), and social relationships (i.e., being patient and forgiving of others, refraining from talking about controversial topics or being critical of others: Castillo et al., 2010).

PRA. PRA is a distinct clinical entity with construct and discriminant validity (Blackmore et al., 2016). PRA is defined as worry or distress particular to pregnancy, including the developing child's health, changes in appearance, labor and birth, future parenting concerns (Blackmore et al., 2016).

PTB. PTB is when a baby is born too early, before 37 weeks of pregnancy have been completed (Center for Disease Control and Prevention [CDC], 2016). It can be difficult to separate the problems due to PTB from problems of LBW because many preterm babies also have LBW. Furthermore, a preterm baby may also have LWB.

Religiosity. Religiosity refers to attitudinal dimensions such as belief in God, religious orthodoxy, commitment to faith, and seeing one's religion as a source of strength (Magana & Clark, 1995).

SGA. SGA fetuses or newborns are those smaller in size than normal for their gestational age, most commonly defined as a weight below the 10th percentile for the gestational age (Schlaudecker et al., 2017). A 1995 WHO expert committee originally developed this classification, and the definition relies on a birthweight-for-gestational-age measure compared to a gender-specific reference population (deOnis & Habicht, 1996; WHO, 1995).

Chapter 2

Literature Review

Biopsychosocial Theory

Pregnancy is a meaningful event in a woman's life signifying physical, emotional, and social change often thought of as a happy or joyous time in her life. This experience is often charged with personal and familial ideals, expectations, and fantasies typically equated with hope and excitement. A substantial number of women experience pregnancy as a period of significant biological, psychological, and social stress associated with untenable anxiety.

A biopsychosocial model emerged in a 1977 study by Engel who recognized the limits of the biomedical model. Engel's (1977) reflection caused him to question the premise directing physicians to treat biological disease while excluding the relevance of psychosocial issues considered to lie outside medicine's responsibility and authority. Engel's (1977) examination of biologically based symptoms of diabetes mellitus in comparison with somatically based symptoms of schizophrenia revealed similarities yet with noticeably differing etiologies. From this comparison arose awareness that a broader spectrum of variables must be considered to understand the determinants of diseases and arrive at rational treatments of healthcare (Engel, 1977).

Engel's (1977) biopsychosocial model sought to acknowledge the patient in the larger context, as part of a complex biosphere, where the patient's internal schemas were connected in a mutually influential interaction with dynamics and influences external to the patient (Buultjens et al., 2013). An extension of this theory is seen in Ross et al.'s (2004) study which recognized that the relationship between biological, psychological, and social factors must be wholly considered when evaluating a pregnant woman's health and well-being. Biological factors include both

genetic and hormonal factors (Ross et al., 2004) which underlie the body's reaction to external forces, and in turn, disturb the organism's homeostasis (St. Laurent et al., 2008) along with genetic vulnerability determined by a personal or family history of anxiety and/or depression (Wenzel & Stuart, 2011). Further, dramatic changes in hormone levels associated with pregnancy, labor and delivery, and lactation impact neurochemical variability and their influence on neurotransmitters associated with mood (Wenzel, 2011).

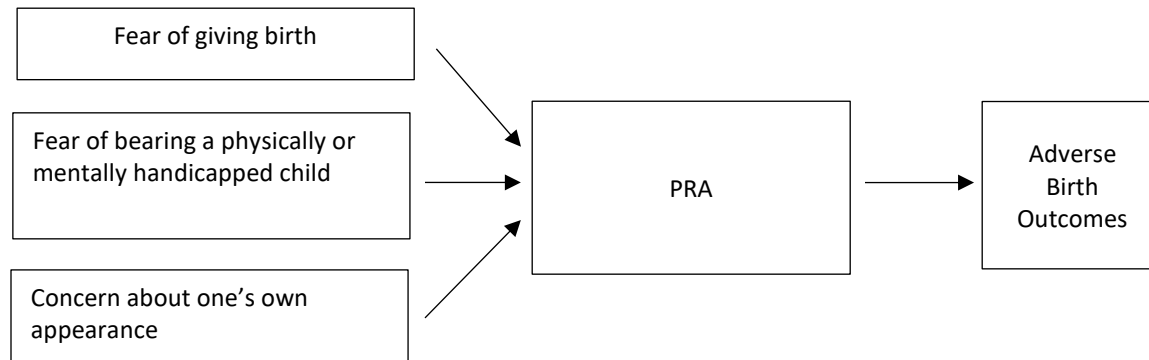
Psychological features incorporate a woman's personal characteristics and include generalized beliefs about one's self (self-esteem), future (dispositional optimism), and perceived ability to control important outcomes (mastery or perceived control: (Rini et al., 1999). Along with personal characteristics, biological and nonbiological determinants of mood on symptoms of depression and anxiety during pregnancy are considered (Ross et al., 2004). Determinants of the social domain include relationship status, highest level of education achieved, household income, unplanned pregnancy, stressful life events, relationship adjustment, and social support (Ross et al., 2004). Several studies (Marmot & Wilkinson, 1999; Moser et al., 2003; Pattenden et al., 1999) identified social inequality as a major determinant of inferior health outcomes. Variables such as ethnic background and culture can influence the occurrence of events and activities in one's life, the way in which events are interpreted and coped with; access to social and personal resources; and the unique constellation of norms, demands, and opportunities in the immediate social environment (Revenson, 1990; Rini et al., 1999; Szapocznik & Kurtines, 1993; Taylor et al., 1997).

The biopsychosocial model, which the WHO adopted, can help clarify a woman's health-related experience during the perinatal period (WHO, 2002). A broad range of variables that

impact maternal and child health throughout the perinatal period can be examined including biological, psychological, and social factors (WHO, 2002).

The Biopsychosocial Model Alongside the Womb Environment

The biopsychosocial model allows for a logical association to be made between the mother's psychological health and the infant's health and well-being. Because a pregnant woman provides the environment for a developing fetus, psychological alterations or mental disorders may further affect the fetus (Huizink et al., 2004). Throughout the course of her pregnancy, a woman may be confronted with psychological instability activating her worries and fears inclusive of being able to carry the baby full term, doubts about delivering a viable healthy baby, fear of not knowing what to do at the time of delivery, and being able to mother her new baby (Raphael-Leff, 1995). A woman's psychological health correlates with adverse birth outcomes in the mother and infant, (see Figure 1). The environment (the womb) in which the fetus develops relies on the influences by the specific culture of its mother's environment. The baby is subject to a world through the impact of maternal biorhythms, hormonal influences, and her patterns of movement, sleep, and intake, and, indirectly, through her activities (Raphael-Leff, 1995).

Figure 1*PRA Model*

A number of social variables that have been found to serve as risk or protective factors influence the perinatal experience. Marmot & Wilkinson (1999) found strong evidence within the maternal and child health domain to suggest an association between greater maternal social complexities, (which likely correlate with subjective measures of stress), and deprivation and LBW and SGA infants. Conversely, higher levels of social support, correlated with fewer symptoms of depression and anxiety in a study of 2,052 Canadian mothers, such that approximately 10% of depression in these mothers resulted from poor social support (Glazier et al., 2004).

The biopsychosocial model provides a framework to examine the impact of acculturation, marianismo, and religiosity on PRA in Latina women. A woman's relationship with her prenatal provider along with parity were also be included as possible moderating/mediating variables.

PRA vs. Generalized Anxiety Disorder

Over the years, research has focused on the marked changes in women's emotional reactions following delivery rather than on their psychological state during pregnancy (Levin, 1991). In addition, anxiety during pregnancy is often evaluated, assessed, and measured in

concordance with criteria of general anxiety and may not adequately measure dimensions of PRA. Indices of general anxiety have been used to predict birth outcomes and children's postnatal development of children (Allen et al., 1998). The symptoms identifiable with PRA may be important predictors of future outcomes for mother and child which require accurate assessment, diagnosis, and treatment.

A limited number of studies (Bayrampour et al., 2016; Brunton et al., 2019; Huizink et al., 2004; Madhavanprabhakaran et al., 2015) are beginning to delineate distinct features concerning anxiety experienced during pregnancy (i.e. general anxiety disorder, social anxiety disorder, panic disorder) apart from anxiety specific to pregnancy (i.e. fear of childbirth, newborn care, breastfeeding, parenting, relationship with partner) to establish PRA as an identifiable clinical category.

Blackmore et al. (2016) drew attention to the occurrence of standardized measures designed to assess symptoms of clinical anxiety. Standardized measures such as the Structured Clinical Interview for DSM-IV (SCID), Penn State Worry Questionnaire (PSWQ), or Hospital Anxiety and Depression Rating Scale (HADS) show a modest correlation with pregnancy related symptoms (Blackmore et al., 2016). Further, Blackmore et al.'s (2016) findings emphasized that PRA shows a different longitudinal course from clinical anxiety and has a predictive ability linked to birth weight, gestational age at birth, and postnatal mood disturbance.

Prenatal Experience During Global Pandemic

Several studies (Baud et al., 2020; Chen et al., 2020; Liang & Acharya, 2020; Zaigham & Andersson, 2020) have recently been published surrounding concern for the potential impact of the Coronavirus disease (COVID-19) on a pregnant woman's mental health. However, these studies have not yet been properly evaluated (Thapa et al., 2020). Conditions such as extreme

stress, emergency and conflict situations, and natural disasters (Thapa et al., 2020) have the potential to increase a woman's risk of maternal mental illness. These conditions, combined with concerns regarding the unborn child's wellbeing, and aggravated by unintended consequences of COVID-19 preventative measures such as quarantine, physical distancing, home isolation, remote consultation with healthcare professionals, and inability to obtain expected levels of support and care prenatally (Thapa et al., 2020), may increase a woman's risk for PRA during the COVID-19 pandemic. Pregnant women are at an increased risk of developing mental health problems such as depression, anxiety, and post-traumatic stress symptoms (Frey et al., 2020), emphasizing a need for additional information regarding PRA in association with COVID-19 during this unprecedented time.

Adverse Birth Outcomes Associated with Prenatal Anxiety

A growing body of literature shows PRA is associated with adverse obstetric and birth outcomes: socioemotional, physical and neuroendocrine development: as well as maternal health and the relationship between the mother and infant. Research has identified that women who experience psychological adversities during pregnancy show a trend towards suboptimal birth outcomes including mortality and morbidity, shorter gestation, LBW, and prematurity (Grote et al., 2010).

Obstetric Concerns and Birth Outcomes

Obstetric concerns for which PRA may be a risk factor include SGA at birth, LBW, and PTB. In an early prospective study, Wadhwa et al. (1993) examined concern for problematic obstetric outcome by evaluating prenatal stress, chronic stress, psychological and physical symptoms, and PRA. Wadhwa et al. (1993) verified a correlation between PRA and SGA at birth. A more recent study by Hoffman et al. (2016) indicated that maternal anxiety increases

cortisol levels and these increases are strongly correlated with PTB, LBW, and other adverse maternal-fetal-infant and child health outcomes.

A number of successive studies examining factors associated with PRA, reinforced findings that PRA associates with PTB, SGA, and LBW (Catov et al., 2010; Hoffman et al., 2016; Lobel, Cannella et al., 2008; Mancuso et al., 2004; Orr et al., 2007; Staneva et al., 2015). Thus, it is particularly important to treat prenatal psychological distress, as the major causes of perinatal, neonatal, and infant mortality in the United States as related to LBW and preterm delivery (Berkowitz & Papiernik, 1993; Paneth, 1995; Rini et al., 1999; Staneva et al., 2015).

Adverse Socioemotional, Physical and Neurological Development in the Infant

Anhalt et al. (2007) stated that research and public policy initiatives underscore the need for further investigation into the relationship between perinatal maternal stress and adjustment and neurodevelopmental effects in children. Scholars have reported associations between prenatal maternal anxiety and difficult infant temperament and attention regulation (Huizink, et al., 2002), motor and mental delays in 8-month-old infants (Huizink et al., 2003), and mental development and attentional processes in 2-year-old offspring (Brouwers et al., 2001). There is evidence that prenatal and perinatal stress predicts offspring psychosocial characteristics well into childhood (Anhalt et al., 2007).

Huizink et al. (2003) found that PRA is connected to reduced capabilities in sensory-perceptual acuities, discriminations, and the ability to respond to: early acquisition of “object constancy” and memory, learning, and other problem-solving abilities: vocalizations and the beginnings of verbal communication; and early evidence of the ability to form generalizations and classifications detectable by 8 months of age. Bayrampour et al. (2016) pointed out that children of mothers with anxiety during pregnancy are at an increased risk for impaired

neuromotor development at 3 months of age (Buist et al., 2011; van Batenburg-Eddes et al., 2009), slower hippocampal growth at 6 months (Qiu et al., 2013), temperamental problems during infancy (Chong et al., 2016; Warnock et al., 2016), reduced adaptive immune response (O'Connor et al., 2013) and development of asthma and allergies (Havland et al., 2013; Tomfohr-Madsen et al., 2016).

Maternal Psychological Health Concerns and Relationship with Infant

Cranley (1981) stated that the relationship between a mother and her infant emerges during pregnancy and the physically developing fetus and psychological adjustments accompanying the upcoming motherhood influence this bond between the mother and fetus. The mother fetus interaction prepares the mother for parenthood. Research suggests that parenting begins in pregnancy (Glover & Capron, 2017) and that stronger prenatal parenting, defined as the extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child (Cranley, 1981; Handelzalts et al., 2018), has been found to be the most powerful predictor of favorable health practices and positive adaptation in pregnancy (Cannella et al., 2018; Handelzalts et al., 2018). Thus, prenatal parenting serves as a protective factor for pregnant women guarding against prenatal stress/depressive symptoms in late pregnancy and the postpartum period (Goecke et al., 2012).

The psychological well-being of the mother enables her capacity toward positive affiliation with the infant. Alhusen et al. (2012) stated that the development of maternal fetal bonding is crucial because it can positively influence maternal health practices, such as, the mother's thoughts and feelings toward her unborn baby (Foley, 2018), curiosity and interest in fetal development (Pajulo et al., 2015), capacity to think of the baby's experience, ability to

imagine future situations with the baby (Slade et al., 2007), and adherence to prenatal care (Alhusen, 2012) during pregnancy and thus, neonatal outcomes.

Moreover, research shows that mothers with anxiety show lack of pregnancy planning, failure to attend prenatal classes, low marital satisfaction (Britton, 2008), and poor maternal health behaviors (i.e., poor nutrition, alcohol use, smoking: Hirshfield-Becker et al., 2004; Lobel et al., 1992). The implication is that prenatal stress influences infant birth outcomes emphasizing the need for improved understanding of the role and mechanisms by which medical, psychological, and social factors cause adverse birth outcomes (Wadhwa et al., 1993).

PRA Factors in Latinas

According to the March of Dimes Perinatal Data Center (2000) the percentage of Latina women of childbearing age is projected to increase 92% by 2050. Barcelona de Mendoza et al. (2016) conducted a prospective cohort study of Latina women in Proyecto Buena Salud, noting that most prior studies on anxiety in pregnancy have been carried out among non-Latina women. Engle et al. (1990) put forward that the reduction of prenatal anxiety among women of ethnic minority groups may well depend on a better understanding of their culture and the impact of acculturation on attitudes toward childbirth, provision of healthcare, fears about pregnancy and childbirth, and sources of social support. Few studies consider psychological factors such as religiosity, marianismo, and the relationship between the woman and her prenatal provider associated with PRA. Gres-Smith et al., (2013) respectfully recognize that little is known about a Latina woman's individual, familial, and cultural characteristics which, undoubtedly, shape expectations about her prenatal experience.

Examining these personal and contextual qualities is critical to understanding the various factors that influence a woman's prenatal expectations (Gress-Smith et al., 2013). In the

conclusion of their study on perinatal depression Lara-Cinisomo et al. (2018) stated that future studies should include anxiety to clarify associations, if any, with cultural orientation (i.e., degree of acculturation, Marianismo, and religiosity) in perinatal Latinas. These factors are indicative of the biopsychosocial model and provide a frame for the consideration of acculturation, religiosity, and marianismo along with parity and a woman's relationship with her doctor correlated with PRA.

Acculturation

Barcelona de Mendoza et al.'s (2016) study noted that cultural changes due to acculturation may influence psychological health. Latina women living in the United States and/or Latina immigrants face stressors related to English language acquisition, adaptation to a new culture, customs and food (Cervantes et al., 2013; Flores et al., 2008), and may also be experience discrimination and difficulty finding housing (Concha et al., 2013; Umaña-Taylor & Updegraff, 2007). Additional factors identified as underlying prenatal anxiety include lack of adequate prenatal information and prenatal care in a clinical setting, less education, expectations about labor and delivery, and difficulty communicating with medical personnel (Lubin et al., 1975 as cited in Engle et al., 1990; Perez, 1982). It is conceivable that many Latina women living or born in the United States and Latina women who have immigrated to the United States have the above mentioned thoughts, feelings, and experiences that underlie worries and fears experienced during pregnancy, thus amplifying PRA.

To my knowledge, a few studies (Barcelona de Mendoza et al., 2016; Engle et al., 1990; Preciado & D'Anna-Hernandez, 2017) have evaluated the impact of acculturation in association with PRA: however, the results have been inconsistent. Some studies have found significant relationships between acculturation and maternal distress in pregnancy. Preciado and D'Anna-

Hernandez's (2017) study of 151 Latina participants (50 born in the United States, 101 born in Mexico) discovered that acculturative stress was a unique predictor of maternal anxiety symptoms; specifically, anxiety symptoms early in pregnancy. Acculturative stress is a slightly different construct from anxiety experienced due to acculturation. Preciado and D'Anna-Hernandez (2017) explained that native cultural and psychological qualities originating from one's country of origin and lived out in the new host country may or may not be harmonious with the customs, values, or beliefs of the host country. Incompatibilities between these two cultures' characteristics may be associated with anxiety experienced during the process of acculturation thus classified as a stressor impacting mental health (Berry, 2003, as cited in Preciado & D'Anna-Hernandez, 2017). Furthermore, the acculturative stress impacting mental health affects emotional well-being contributing to psychological afflictions during the prenatal period (Acevedo, 2000, as cited in Preciado & D'Anna-Hernandez, 2017), and as such, higher levels of acculturative stress were found to be a predictor of prenatal anxiety (Preciado & D'Anna-Hernandez, 2017).

In contrast, Engle et al.'s (1990) study including 291 Latina participants (279 born in Mexico) found that acculturation was not directly associated with prenatal or postnatal anxiety, although it correlated with greater assertiveness and desire for control during labor and delivery. Interestingly, women with bicultural levels of psychosocial acculturation had lower trait anxiety scores in early pregnancy than women who were less acculturated to the host society (Barcelona de Mendoza et al., 2016). Preciado and D'Anna-Hernandez (2017) speculated that women may feel anxious during pregnancy when caught between the customs, values, and beliefs of their native culture and the mainstream culture they will raise their child in. The paucity of research considering acculturation in association with PRA in Latina women combined with divergent

results from the small number of studies available, indicate a need for further research in this area. Additional research is needed to collect and compare information regarding pregnancy and childbirth anxiety across cultures within the United States to improve the delivery of prenatal and intrapartum care (Engle et al., 1990).

Religiosity

Research related to psychological health and religious faith has shown many individuals lean on their spiritual beliefs as a coping strategy during stressful periods of their life (Cowchock et al., 2011; Magaña & Clark, 1995; Mann et al., 2008; Seth et al., 2011). A connection to one's higher power or belief in a divine being may provide hope and a source of comfort especially during times of distress. Magaña & Clark (1995) considered the religiosity and spirituality of many Latinas—a key factor in their culture—which may protect them and their infants through the pre and antenatal phases of life.

Religiosity is one specific aspect of Latino culture that has associated with better health outcomes (Magaña & Clark, 1995). Religiosity is viewed as an attitude and a belief in God, commitment to a faith, and seeing one's religion as a source of strength (Magaña & Clark, 1995). Religious beliefs are significant positive influences on psychological distress due to pregnancy loss (Cowchock et al., 2011). Keefe et al.'s (2016) study, which included 30 participants (19 African American and 11 Latinas) found that mothers with faith and spiritual beliefs felt supported by their faith communities and experienced peace, calmness, and reduced stress by accepting God's guidance. The latter two studies focused on unexpected termination of a wanted pregnancy and postpartum depression, respectively and are relevant in demonstrating how Latina women may lean on their religion or faith by attending church services and engaging in prayer

(Cowchock et al., 2011) to help them think and act differently, develop new perspectives, make changes in their relationships, and develop empathy for others (Keefe et al., 2016).

Magaña & Clark (1995) explained that one religious symbol uniquely central to Mexicans and Mexican Americans is the Virgin of Guadalupe. They suggested that Mexican women are devoted so greatly to this figure that any exploration of Latinos' religiosity must consider her influence. Positive attitudes of many Mexican American women toward their pregnancies seem strongly tied to this one religious image (Bilbija & Rodriguez, 1995). A conceptualized view suggests the Virgin of Guadalupe expresses a Mexican American woman's values of being female, a mother, and brown-skinned; that her image compensates when a Latina feels lacking in her abilities as a woman, partner, and mother, and she can petition the Virgin for strength, endurance, patience, or compassion (Bilbija & Rodriguez, 1995). Magña & Clark (1995) stated that careful examination of the religious or spiritual dimension of culture in Mexican American subgroups is necessary along with a better understanding of nonconventional prenatal care which may be as good or better than medical checkups for ensuring safe deliveries and healthy babies.

Marianismo

Latina women have been described as adhering strongly to family values which are closely related to marianismo, a construct that sets forth gender-specific role expectations regarding the centrality of motherhood and childcare in the lives of Hispanic women (Castillo et al., 2010). Marianismo emphasizes the role of women as family- and home-centered; it encourages passivity, self-sacrifice, and chastity (Gil & Vazquez, 2014; Niemann, 2004). Historically, marianismo is rooted in Christian values brought to Latin America during colonization, which defined women as nurturing figures and spiritual pillars of the family; it is a

construction of the expected female gender roles based on the Virgin Mary (Gil & Vazquez, 1996; Niemann, 2004). Although the values espoused by the marianismo ideal may be considered controversial or in conflict with modern ideas regarding women's rights, the construct has nevertheless been shown to be valid in research and useful for predicting certain outcomes (Castillo et al., 2010), such as PRA.

Findings regarding the influence of marianismo are inconsistent in predicting mental health concerns and often associated with only perinatal depression in pregnant Latina women. Nuñez et al. (2016) examined the association of marianismo with negative cognitive-emotional factors such as depression symptoms, cynical hostility, and trait anxiety and anger in a cross-sectional cohort study of 16,415 Hispanics (54.41% female) aged 18-74. Participants were drawn from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) and comprised of Hispanics of Central American, Cuban, Dominican, Mexican, Puerto Rican, South American, and Hispanic backgrounds (Nunez et al., 2016). Results found that specific components of traditional gender roles associated with higher levels of negative cognitions and emotions and correlated with higher levels of depression, anxiety, and anger (Nunez et al., 2016). These findings are not intended to perpetuate stereotypes; rather, they shed light on the mental health impact of traditional gender roles among this population and enhance our understanding of the importance of gender role socialization in the context of Latina's psychological health indicators (Nunez et al., 2016).

Varying degrees of adherence with Marianismo in pregnancy have demonstrated a moderating effect on women's mental health, suggesting that the perinatal period should be an important factor in understanding observed associations (Albuja et al., 2017). For example, Gress-Smith et al. (2013), found marianismo to be protective in pregnancy, while Lara-Cinisomo

et al. (2018) showed it had negative consequences postpartum. These findings highlight the importance of studying marianismo in pregnancy and post-delivery because it may differ during these two periods, ultimately having differential effects on perinatal depression (Lara-Cinisomo et al., 2018), and likely PRA.

Latina Women and Prenatal Healthcare

The prenatal care period provides an opportunity for women to receive preventive services, education, nutritional support, and other social services to improve pregnancy outcomes (Lindsay et al., 2017) although racial and ethnic disparities exist in access and use of prenatal care. Federal efforts encouraging women to seek prenatal care have had some success in increasing first trimester prenatal care in the general population however, nationally and along the United States border, about 69% of Hispanic women had first trimester prenatal care in 2012, compared to 79% of white, non-Hispanic women (U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, 2015). Thus, Latinas are less likely than non-Hispanic Whites to receive early and adequate prenatal care, which is a concern because prenatal care is a critical moment for detecting, preventing, and/or treating diseases (Wasserman et al., 2007). To understand differences in prenatal care participation amongst Latina women, Novick (2009) stated that some women of ethnic minority have reported dissatisfaction with prenatal care related to cultural stereotyping. Undocumented Mexican American women may be illegal immigrants and fear detection if they present to clinics; some may lack access to transportation; and some may feel that pregnancy, being a natural part of life, requires no special healthcare as long as the woman feels healthy (Lipson & Dibble, 2005).

Curandera-parteras. It is important to consider cultural and traditional influences of a Latina's attitudes, beliefs, and values about seeking prenatal care and to understand the relationship between her and her healthcare provider. At the same time, care should be taken not to assume homogeneity of any cultural group, as health practices can vary widely within each culture (Fleuriet, 2009). Curandero/a comes from the Spanish verb curar, which means "to heal" and the partera specializes in childbirth, although she may or may not offer prenatal care (Ortiz, 2005).

Historically, curandera-parteras (traditional Hispanic midwives) were the primary maternity caregivers (Ortiz, 2005) and were popular within their communities. It was common for the curandera-partera to be a relative or family friend who often shared the same vocabulary, values, and sociocultural background (Ortiz, 2005) allowing for ease of communication. It has been suggested that this connection increased the trust between the pregnant woman and her curandera-partera (Rebolledo & Marquez, 2000), thus reducing mental stress during birth and delivery. Moreover, a partera from within the community relieved concerns regarding accessibility of doctors to provide adequate care due to distance and prohibitive health care costs (Ortiz, 2005).

Midwives' or parteras' practices may combine spirituality with medicine in an effort to capitalize on the patient's faith and belief system (Ortiz, 2005). Culturally specific practices of the midwife/partera include prayers, statues of saints, other religious symbols, or spiritual beliefs to assist with care, relieve the woman's pain and suffering, and contribute to better labor (Ortiz, 2005). Murray de Lopez (2015) reported three different types of parteras: the indigenous partera (who performs and enforces traditional practices), the empirical partera (the most common type

of partera and one associated with science-based modern practices), and the professional partera (who attends births at home or in a casa de partos and performs caesarean sections).

Relationship Between Pregnant Latina Women and Their Prenatal Healthcare Provider

Currently, there is a paucity of research considering the relationship between a pregnant woman and her prenatal healthcare provider. It is important to understand the relationship between pregnant Latina women and their healthcare providers for the design of efficacious prenatal education and counseling (Lindsay et al., 2017) to reduce stigma surrounding emotional distress during pregnancy (Lara et al., 2010), and to empower Latina women to increase help-seeking behaviors (Munoz et al., 2007).

Lindsay et al. (2017) interviewed 23 pregnant Latina women, and explored the risk of pregnancy-related disease (e.g., gestational weight gain, [GWG]) with respect to patient-provider communication during pregnancy. This aim is distinctly different from other studies focused on capturing PRA information, yet reveals helpful subjective information collected during face-to-face interviews which illustrate Latina women's views regarding their medical provider or birth attendant. Results produced three notable themes related to patient-provider communication and advice about GWG: (a) women received limited advice from their primary healthcare provider about GWG, (b) women received very limited to no advice from their primary healthcare providers about being physically active during pregnancy, and (c) women relying on interpreters felt this to be a barrier to their communication with their primary healthcare providers and kept them from engaging in more communication (Lindsay et al., 2017). The authors point out that these findings suggest the importance of integrating communication and counseling into prenatal care services to meet the needs of low-income, minority Latina women (Lindsay et al., 2017).

In a former and revealing study, Engle et al. (1990) examined psychosocial factors and participants' preferences of health care provider related to prenatal and postnatal anxiety in 291 primiparous Mexican women. Amongst the psychosocial factors considered, the researchers asked participants, what characteristics of providers do Latina women generally value in their healthcare provider and whether there are any specific characteristics highly anxious women particularly value in their provider (Engle et al., 1990). Outcomes from this study showed that the most important quality of both doctors and nurses were that they "explain what is happening" (mentioned as *very important* by 90% of the women), "know a lot about medicine" (*very important* for 89%), be "understanding and sympathetic" (*very important* for 76%), "be friendly" (*very important* for 73%), and "be polite" (*very important* for 63%: Engle et al., 1990). Demographic characteristics of providers, such as age, sex, and being Latino, were generally *not at all important*, although 63% of the women considered speaking Spanish as being *very important* (Engle et al., 1990).

Parity

Logical reasoning suggests women who have never given birth (i.e., nulliparous women) would be more anxious than women who have had previous children (i.e., parous women; (Wenzel, 2010), but results are also mixed in this regard. Rouhe et al., (2009) stated that "parity influences the contents of fear," noting that "nulliparous women fear the unknown, pain, and loss of control..." and "parous women['s] fear arises from negative previous experiences" (p. 67). While Rouhe et al. (2009) found higher levels of fear of childbirth in nulliparous women than in parous women, they pointed out that it is not yet known how fear varies during a specific pregnancy; for example, if in some women it decreases and in others it increases with advancing pregnancy.

In a study of 372 ethnically and racially diverse women, parity more strongly associated with PRA at mid-gestation with higher levels of PRA in first-time mothers than experienced mothers (Blackmore et al., 2016). Teixeira et al. (2009) found multiparity as another potential contributor to anxiety in pregnancy. Further research is needed to examine how and whether specific pregnancy-related fears and worries differ across one's number of pregnancies, and which are genuinely transient (Buist et al., 2011), with an emphasis on understanding these factors among Latina women.

COVID-19

COVID-19 is a global public-health emergency and a novel, highly contagious pneumonia caused by the severe acute respiratory syndrome coronavirus 2 (SARS-Co V-2; (Masjoudi et al., 2020). The available data about COVID-19's effects on pregnancy and its probable implications seems to be insufficient (Tuite et al., 2020).

The social distancing program and fear of becoming ill with COVID-19 may lead to social isolation and disconnection which can cause sadness, concerns, fear, anger, irritation, and frustration (Ren et al., 2020). Conceptually, these factors may generate elevated levels of PRA. In an empirical review, studies have shown that clinical signs, laboratory results, and radiographic criteria in pregnant women with COVID-19 are similar to other affected adults, but the risk of pregnant women developing COVID-19 is high due to their weakened and suppressed immune system during pregnancy, which increases the possibility of pregnancy complications and newborn infection (Breslin et al., 2020). These factors have led to anxiety and stress in pregnant women and their families (Fakari & Simbar, 2020).

Exploring the impact of COVID-19 on PRA is beyond the scope of this study; however, keeping in mind the aforementioned stressors and anxiety that may arise in pregnant women due

to the pandemic, I included a qualitative question in this study to gain insight into a woman's subjective experience of being pregnant during a global pandemic.

The Present Study

While research continues to examine mood disorders during the perinatal and postpartum periods, very few examine PRA as a distinct syndrome. Indices of general anxiety have been used to predict birth outcomes and children's postnatal development of children (Allen et al. 1998; Dorn et al., 1993; Istvan, 1986; McCool et al., 1994). These scales have not been designed to assess anxieties and worries related specifically to pregnancy (Huizink et al., 2004) which some researchers believe should be treated as a distinct diagnostic category, as has been explained earlier.

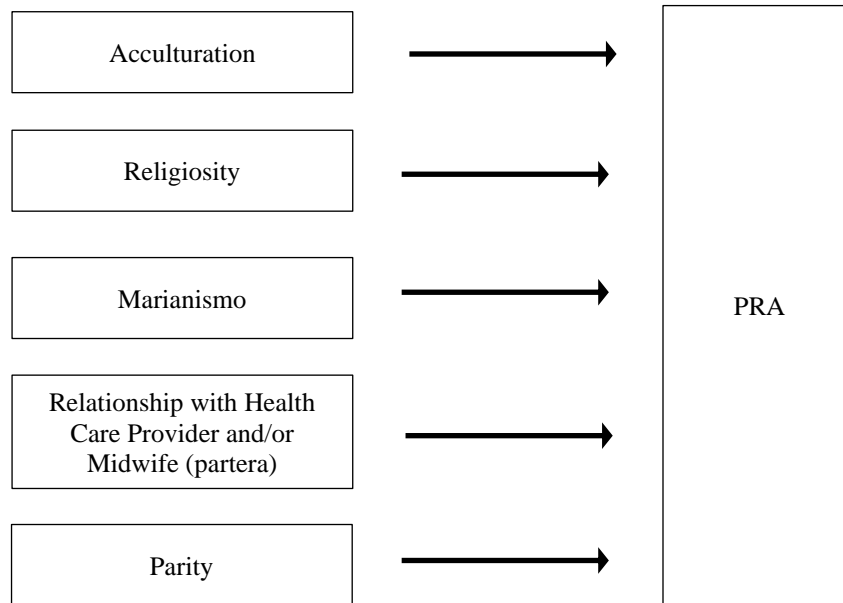
Further, research has focused on the marked changes in women's emotional reactions following delivery rather than on their psychological state during pregnancy (Dawson et al., 2000; Glasheen et al., 2010; Kendell et al., 1987; McMahan et al., 2001; Matthey et al., 2003; Nicol-Harper et al., 2007). It is important to note that the best predictor of postnatal anxiety and depression is prenatal anxiety (Engle et al., 1990). This fact poses the question of whether treating prenatal anxiety may reduce or prevent postnatal anxiety in the mother, as well as prevent developmental delays in the infant. More focused research on prenatal anxiety will help answer this question and create opportunities for preventive intervention by treating prenatal anxiety.

Studies that contribute to anxiety, however, have been investigated less often, particularly for non-Anglo, ethnically distinct women such as Latinas (Engle et al., 1990). Factors associated with prenatal anxiety use White or heterogeneous samples and include factors such as stress, social support (Norbeck & Tilden, 1983), somatic symptoms (Lubin et al., 1975), adequate

information (Lunenfeld et al., 1984), and education (Glazer, 1980; Lubin et al., 1975). Studies examining PRA in Latinas are scarce. Barcelona de Mendoza et al. (2016) noted in their review literature review on PRA in Latinas that only six papers had researched the relationship between acculturation and anxiety in pregnancy (yielding inconsistent findings) and three showed no association (Campos et al., 2007, Campos et al., 2008; Engle et al., 1990). None of the studies examined change in anxiety over the course of pregnancy, only one used a bi-dimensional scale to measure acculturation, and all of these studies were limited to Mexicans or Mexican Americans as the primary Hispanic subgroup (Barcelona de Mendoza et al., 2016).

Further, a systematic review of acculturation, religiosity, and marianismo factors in Latina women produced 10 relevant articles yielding results associated with depression (Lara-Cinisomo et al., 2018) and even fewer with PRA. This is an important research gap considering the potential benefit from understanding the causes of, preventive factors related to, and therapeutic options for prenatal anxiety. The majority of the research emphasizing pregnancy-specific anxiety factors among Latina women are over 30 years old indicating a need for current information and establishing grounds for this study.

The biopsychosocial model provides a frame to consider the interaction of biological and psychosocial variables simultaneously and their impact on PRA in Latina women and her fetuses. As stated earlier, many social and cultural factors relevant to prenatal anxiety are unique to Latina women and may not be relevant in studies of other populations. For these reasons this study investigated the presence of PRA amongst Latina women aged 18 and up and examined the correlation of the following culturally relevant factors: acculturation, marianismo, and religiosity, as well as the number of pregnancies and the quality of the relationship between women and their health care providers and/or birth attendants (see Figure 2).

Figure 2*PRA in Latina Women Ages 18 and Up***Research Questions**

Research Question 1: Of acculturation, religiosity, and marianismo, which factor predicts the greatest variance in PRA in Latina pregnant women aged 18 and up?

Hypothesis 1: Acculturation will account for the most variance in PRA.

Research Question 2: What is the relationship between the number of pregnancies and PRA in Latina women ages 18 and up?

Hypothesis 2: A higher number of pregnancies is likely to be associated with lower levels of PRA.

Research Question 3: What is the relationship Latina women have with their healthcare provider and PRA in Latina women ages 18 and up?

Hypothesis 3: A higher quality of relationship between a woman and her healthcare provider and/or birth attendant will correlate with lower scores of PRA.

Supplemental Qualitative Research Question

Research Question 4: What are the experiences and feelings that Latina women have about their pregnancy during the COVID-19 pandemic?

Chapter 3

Method

Study Design

I employed a quantitative cross-sectional approach in this study to investigate the presence of PRA and associated factors among Latina women aged 18 and up. This design enabled me to investigate how much variance in PRA was accounted for by acculturation, marianismo, and religiosity. In addition, the study's design allowed me to further understand the association between a Latina woman's prenatal anxiety and her relationship with her primary care provider and/or midwife (partera) as well as the relationship between parity and prenatal anxiety.

I used a single open-ended qualitative question to gain an understanding of a woman's perinatal experience during COVID-19. This question was optional, positioned at the beginning of the survey, and allowed participants to enter their comments in a text box. I included the qualitative question in hopes of learning about the common meaning of the participants' lived experience pertaining to a particular concept or a phenomenon (Creswell & Poth, 2018), and more specifically, being pregnant during COVID-19. Ideologically, phenomenologists focus on describing what all participants have in common as they experience a phenomenon with the intention of concentrating on the essence of the universal human experience (Creswell & Poth, 2018). Therefore, I applied a phenomenological approach to examine women's perinatal experiences in light of COVID-19 and the impact on PRA (Van Manen, 2016).

Participants

Table 1 provides descriptive statistics. It should be noted that the descriptive data is based on the number of participants who completed the demographic items ($n = 60$). The data analysis

information had seven incomplete surveys and is based on 53 participants. Participants included in the study identified as Hispanic, Latino, or of Spanish origin ($n = 60$, 100%). A large part of the sample identified as second generation ($n = 24$, 40%) Hispanic, Latino, or Spanish with a smaller percentage ($n = 13$, 21.7%) identifying as third generation. 51% of the sample was pregnant for the first time. 58.3% of participants were in their second trimester of pregnancy, and 31.7% were in their first trimester of pregnancy. Many of the participants ($n = 28$, 46.7%) reported seeking an Obstetrician Gynecologist (ObGyn) for their prenatal care and nine participants ($n = 15$) reported seeking a certified professional midwife.

Participants were eligible to participate in this study if they met all of the following criteria:

- a) currently pregnant
- b) identify as Latina, Hispanic, and/or Chicana
- c) over the age of 18
- d) proficient in English or Spanish language
- e) no previous or current diagnoses of a severe mental illness (i.e., personality disorders, bipolar disorder, schizophrenia or substance use)

To ensure eligibility criteria were met, the online survey was designed to conclude should a participant select a disqualifying choice. It is possible that a portion of the participants did not meet full criteria as the eligibility question regarding their age prompted participants to select one of the following choices, 18-24, 25-34, 35-49, 49+, and left out an option indicating whether the participant was younger than 18 years of age.

Table 1*Descriptive Statistics for Demographics*

Variable		Frequency	Percent
Weeks Pregnant	first trimester (8-12 weeks)	19	31.7
	second trimester (13-24 weeks)	35	58.3
	25-38+ weeks (25-38+ weeks)	6	10
Relationship Status	single, never married	16	26.7
	married or domestic partnership	43	71.7
	divorced	1	1.7
Highest Level of Education	12th grade or less	3	5
	high school graduate or GED	11	18.3
	college graduate (BA or BS)	14	23.3
	some college/AA degree/technical school training	16	26.7
	graduate school degree: Master's or Doctorate Degree	9	15
	professional degree	7	11.7
Household Income	\$5,000 - \$19,000	9	15
	\$20,000 - \$49,000	18	30
	\$50,000 - \$99,000	23	38.3
	\$100,000 - \$149,000	4	6.7
	less than \$5,000	2	3.3
	more than \$150,000	3	5
	chose not to answer	1	1.7
Religious Affiliation	Born-again Protestant	3	5
	Evangelical Protestant	2	3.3
	Roman Catholic	18	30
	Christian	21	35
	Orthodox Christian	3	5
	Other	2	3.3
	None	10	16.6
	Atheist	1	1.6

Note. *N* is used to indicate sample size. *N* = 60

Institutional Review Board (IRB) Approval

The IRB of the University of San Francisco approved this study (see Appendix A for the approval documents).

Participant Recruitment

I was originally going to recruit participants for this study from local community mental health clinics or hospitals that provide prenatal care to Latina women. However, many of these potential sites were required to close due to COVID-19 and government-regulated shelter-in-place protocols. Therefore, I recruited participants utilizing an online survey software tool offered by Qualtrics.

Qualtrics is a web-based online software tool used to create surveys, recruit participants, collect and analyze data, and generate reports (Qualtrics, 2019). Participants for this study were selected from targeted email lists, permission-based networks, and social media based on the eligibility criteria listed above. The cost of Qualtrics's services was \$23.75 per quality response and personally subsidized. I sent emails to regions within the United States that provided a higher probability of reaching participants who fit the eligibility criteria. A breakdown of the email distribution by geographical region is as follows: 37% to the South, 21% to the Midwest, 18% to the Northeast, and 23% to the West. Selected individuals received an email inviting them to participate in an online survey accessible from their desk, laptop computer, or smart phone. When an email recipient elected to take part in the survey, they clicked on a link provided in the email which opened a web-based survey offering an English or Spanish language option. Once an individual chose their preferred language and electronically signed the statement of confidentiality, a participant could complete the survey by following the prompts and answering the questions through to completion.

“Online data collection is increasingly common in psychology” and often utilizes “modern survey software, such as Qualtrics,” to “implement studies” and “administer a range of procedures from randomized questionnaires” (Carpenter et al., 2019, p. 2195). Social-science researchers have a number of sources for low-cost nonprobability samples such as Amazon’s Mechanical Turk (MTurk), Survey Sampling International (SSI), and Qualtrics. The most commonly used sampling source is Amazon’s (MTurk) due to its low cost and the ease of recruiting participants (e.g., Behrend et al., 2011; Berinsky et al., 2012; Buhrmester et al., 2011; Coppock, 2018; Gamblin et al., 2017; Mullinix et al., 2015; Paolacci et al., 2010).

Qualtrics and SSI offer low-cost nonprobability samples that use a variety of opt-in methods to populate panels (Qualtrics, 2019). These samples differ from MTurk because they are panel-based. Panels are a collection of information (names, addresses, email addresses, dates of birth) about individuals gathered over time. Researchers using Qualtrics Panels can request quota sampling to ensure that the sample represents the demographic characteristics of a population (Qualtrics, 2019). The findings showed that using Qualtrics may be more suitable to nonexperimental social-science research compared to MTurk and SSI (Zach et al., 2019); therefore, I elected to use Qualtrics as the online data-collection platform for this study.

For the current study, I conducted a power analysis for a linear regression was conducted in G-POWER to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a large effect size ($f^2 = 0.35$) (Faul et al., 2013). Although f squared is an uncommon analysis used to measure effect size, “it allows for an evaluation of local effect size, i.e., one variable’s effect size within the context of a multivariate regression model” (Selya et al., 2012, p. 1). Based on the assumptions, the desired sample size was 36 and this study yielded 53 complete surveys. I encouraged participants were encouraged to participate until I had collected data for the intended

number of participants. I sent the email communication on December 14th and the study ended December 18th, 2020. Participation was voluntary and they were informed of their option to withdraw at any time.

Measures

I selected instruments with the biopsychosocial theoretical frame in mind, were offered them in English and Spanish languages, and administered them at one time point during pregnancy. I selected instruments based on strength of psychometric properties, used with similar populations, availability in English and Spanish language as developed by the authors, and where comparable information was accessible.

Eligibility Questionnaire

I included an eligibility questionnaire was included to determine if participants qualified to complete the questionnaire (see Appendix B).

Demographic Questionnaire

A demographic questionnaire obtained information regarding number of pregnancies, stage of pregnancy, race/ethnicity, country of origin, level of education completed, relationship status, religious preference, and household income (see Appendix C.)

Coronavirus pandemic 2019 (COVID-19)

I included a singular open-ended qualitative question was included to gather information about a Latina pregnant woman's perinatal experience during COVID-19.

Pregnancy-Related Anxiety Questionnaire-Revised (PRAQ-R)

The Pregnancy-Related Anxiety Questionnaire–Revised (PRAQ-R), a 10-item shortened version of the PRAQ, has been psychometrically tested (Huizink et al., 2004) and seems to be a robust predictor of birth-related and childhood outcomes, independent of general anxiety

measures (e.g. Huizink et al., 2002, 2003; Reck et al., 2004). Previous studies have shown that pregnancy anxiety assessed with the PRAQ-R reflects a construct that differs from general anxiety (Huizink et al., 2004; Huizink et al., 2014), although the two do influence each other over time during pregnancy (Huizink et al., 2014).

This questionnaire consists of 10 items that fit to a 3-factor model: fear of giving birth, fear of bearing a physically or mentally handicapped child, and concern about one's own appearance. Participants answered each item using a 5-point scale, ranging from "never" to "very often." The anxiety score can be obtained by summing questions 2-11 produces the anxiety score, providing a total sum score between 10–50. A low score (<20) indicates low levels of anxiety (i.e., hardly ever relevant, absolutely not relevant,), and a high score (>40) indicates high levels of anxiety (i.e., reasonably relevant, very relevant; Huizink et al., 2016). The Cronbach's alpha for total score was 0.79 in this study.

Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)

Cuéllar et al. (1995) developed a 30-item scale that assesses language preference, association with, and identity with the Mexican American and Anglo cultures. The ARSMA-II consists of the Mexican Orientation Subscale (MOS; 17 items) and the Anglo Orientation Subscale (AOS; 13 items). Participants responded to items using a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*extremely often or almost always*). Subscale items were averaged to obtain a mean subscale score for each participant.

I calculated an overall acculturation score by subtracting mean scores of the MOS from mean scores of the AOS, which represented an individual's score along a continuum from very Mexican oriented to very Anglo oriented (Cuéllar et al., 1995). I used the acculturation score to obtain an acculturation level by employing the ARSMA cut off scores (Level 1: Very Mexican

oriented, < -1.33 ; Level 2: Mexican oriented to approximately balanced bicultural, ≥ -1.33 and ≤ -0.07 ; Level 3: Slightly Anglo oriented bicultural, > -0.07 and < 1.19 ; Level 4: Strongly Anglo, ≥ 1.19 and < 2.45 ; Level 5: Very assimilated; Anglicized, > 2.45 ; (Cuéllar et al., 1995).

The ARSMA-II subscales have evidenced moderate internal consistency ($\alpha = .83$ for the AOS; $.88$ for the MOS), and stability across a 2-week period ($.94$ and $.96$, respectively; Cuéllar et al., 1995) (Flores et al., 2006) and was the instrument administered for this study. Cuéllar et al.'s (1995) revision of the ARSMA-II considers acculturation at the macro (social/group) and micro (individual) levels with regard for changes in an individual's attitudes, behaviors, beliefs, values, and the like in individuals as a result of acculturation. For this study, Cronbach's alpha score for the AOS subscale was 0.81 and the MOS subscale was 0.94 .

Marianismo Beliefs Scale (MBS)

The MBS (Castillo et al., 2010) was designed to assess the extent to which a Latina woman believes she should enculturate and participate in traditional gendered cultural values encompassed within the marianismo construct. This 24-item measure consists of five subscales or pillars: family (five items; e.g., "A Latina must be a source of strength for her family"), virtuous and chaste (five items; e.g., "A Latina should (should have) remain(ed) a virgin until marriage"), subordinate to others (five items; e.g., "A Latina should do anything a male in the family asks her to do"), silencing self to maintain harmony (six items; e.g., "A Latina should feel guilty about telling people what she needs"), and spiritual (three items; e.g., "A Latina should be the spiritual leader of the family"; Castillo et al., 2010). The items were rated along a 4-point scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*; Castillo et al., 2010).

The score was calculated as the mean of items in each subscale or of the scale as a whole. In this study, the total scale score was used with the range of scores between 24 - 96. Higher

scores indicated more adherence to marianismo beliefs, regardless of whether the researcher used subscale scores (e.g., Family Pillar) or total scores (Castillo et al., 2010). This study calculated Cronbach's alpha total score of 0.92.

The Santa Clara Strength of Religious Faith Questionnaire (SCSORF)

The SCSORF, designed by Plante & Boccaccini (1997), is an instrument that measures strength of faith unrelated to a particular denomination or religious affiliation. The instrument was designed to provide researchers and clinicians with a quick, easy-to-administer and score, and useful measure of strength of religious faith for mental health research and practice (Plante & Boccaccini, 1997). The questionnaire can be used in multiple and diverse settings with multiple and diverse populations and is available in multiple languages with multicultural norms (Plante, 2010).

The measure consists of 10-items (e.g., "My religious faith is extremely important to me", "I pray daily," and "I enjoy being around others who share my faith") and offers a 4-point scale measuring strength of faith regardless of denomination (Plante et al., 1999). Adding each item's score produces an overall total score, which will range from 10 (low faith) to 40 (high faith) with higher scores indicating a stronger sense of religious faith (Plante & Boccaccini, 1997). In a preliminary investigation, Plante & Boccaccini (1997) found the SCSORF to have high internal reliability (Cronbach Alpha = .95) and split half reliability ($r = .92$). The Cronbach's alpha score for this study was 0.93.

Mothers on Respect index (MOR)

The MOR was developed to assess the nature of patient-provider interactions and their impact on a person's sense of respect during maternity care (Vedam et al., 2017). The MOR index is a 14-item patient-informed quality and safety indicator which assesses aspects of

patient-provider communication. The MOR consists of three sections: Section A (level of comfort), Section B (quality of care), and Section C (level of comfort in asking questions) that can be applied across jurisdictions to assess the nature of provider-patient relationships, and access to person-centered care (Vedam et al., 2017).

The MOR index was developed through a participatory research process and has been administered to women in Canada and the United States. The index is a reliable and valid measure of respectful maternity care. Researchers must calculate a total for Sections A, B, and C to score the MOR sections. The range of scores is 14-84, with higher score indicating more respectful care (14-31 = very low respect, 32-49 = low respect, 50-66 = moderate respect, and 67-84 = high respect; Vedam et al., 2017). The MOR Cronbach's alpha score for the current study was 0.81.

Data Analysis Plan

Data Cleaning

I performed a series of preliminary steps prior to conducting analyses to test the research questions. First, I cleaned the data to ensure they were correctly transferred from the electronic survey into SPSS software Version 26. A total of 60 participants responded to the survey and completed the demographic items. However, seven individuals did not complete the portion of the survey that contained the measures. Therefore, all the data analysis examined 53 participants. Next, I had to perform any recoding and variable labeling; however, in this case no recoding or variable labeling was necessary. Once I completed this step, I assessed assumptions of normality, homoscedasticity, absence of multicollinearity, and lack of outliers.

Normality assumes the regression model variables follow a normal distribution (bell-shaped curve) and are examined with a Q-Q scatterplot of the residuals (Field, 2017; Bates et al., 2014; DeCarlo, 1997). The assumption of homoscedasticity requires that there is no underlying

relationship between the residuals and fitted values. The assumption was examined with a scatterplot of the residuals and the fitted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The absence of multicollinearity implied the predictor variables are not too highly correlated with one another and were assessed using variance inflation factors (VIF); thus, the multicollinearity assumption was met (Pallant, 2016). VIF values over 10 suggested the presence of multicollinearity (Pallant, 2016). No values were found to be more than 10 in this study. I did not identify any outliers were identified based on my observations of stem and box plots using the parameters of a standardized residual that exceeds the .999 quantile of a t -distribution, with the degrees of freedom being $n-1$, and where n is the sample size (Field, 2017; Pituch & Stevens, 2015). No extreme outliers were found and therefore the assumption was met.

I calculated Cronbach's alphas prior to conducting any analysis to confirm internal consistencies of the following constructs: acculturation, religiosity, marianismo, parity and relationship with primary healthcare provider. I considered a Cronbach's alpha of .6 or greater as the minimal level of acceptability. My analysis revealed all constructs were above .6, and therefore, had internal consistency.

Data Analysis

To answer Research Question 1, I conducted a hierarchical regression model to determine whether a set of variables (acculturation, religiosity, marianismo) explained more variance in PRA than acculturation on its own. I performed a hierarchical linear regression by conducting several linear regression models in steps, where I added new variables in each step. Each model is compared to the model in the previous step to determine if the added variables explain significantly more variance in the dependent variable. (Bates et al., 2014).

For this study, I conducted a 2-step hierarchical regression model with PRA as the dependent variable. I entered religiosity and marianismo in Step 1 (Model 1) of the regression to control for acculturation. I entered acculturation in Step 2 (Model 2) to examine the amount of variability in PRA that religiosity, marianismo, and acculturation account for when examining these independent variables together. Examining the model summary also shows the goodness of fit for the data to be analyzed using hierarchical regression. In addition to the model summary table, I examined the standard beta coefficients to determine how much variance is explained by each individual predictor variable when the other predictors are controlled for. Lastly, I reported a regression summary equation based on the unstandardized beta coefficient.

To examine Research Question 2, I conducted both a Spearman rho correlation and t-test to assess if a relationship exists between parity (number of pregnancies) and PRA. The Spearman rho was run to assess if a relationship exists between parity (number of pregnancies) and PRA. The t-test was run in two ways. First, the t-test examined the difference of PRA amongst women pregnant for the first time compared with the woman pregnant for two or more times. Second, the t-test examined the difference of PRA in women pregnant for the first time compared with women pregnant for the second time.

A Spearman rank correlation is the appropriate analysis when one or both variables are ordinal, but it can be used with scale variables. The correlation is a bivariate measure of association (or strength) of the relationship between two variables, and the magnitude of that relationship. The Spearman rank correlation assumes the variables have a monotonic relationship with each other (Conover & Iman, 1981). A monotonic association means that the relationship between the variables does not change direction. This assumption will be violated if the relationship between the variables shifts from positive to negative or vice versa. Cohen's

standard was used to evaluate the correlation coefficient, where 0.10 to .29 represents a weak association between the two variables, 0.30 to 0.49 represents a moderate association, and 0.50 or larger represents a strong association (Cohen, 1988).

To examine Research Question 3, I conducted a Pearson product-moment r correlation to assess the relationship a woman has with her healthcare provider and/or birth attendant and PRA. Similar to the process noted above, a Pearson correlation analysis assumes that the variables have a linear relationship with each other (Conover & Iman, 1981). Given that the variables are continuous (interval/ratio data), the assumption of linearity is met, and the hypotheses seek to assess the relationships, or how the distribution of the z scores vary, a Pearson r correlation is the appropriate bivariate statistic.

I employed principles from a phenomenological thematic approach to analyze responses to the supplemental qualitative research question: What were your experiences and feelings about prenatal care during the COVID-19 pandemic? A phenomenological thematic approach emphasizes openness, questioning pre-understanding, and adopting a reflective attitude (Sundler et al., 2018), and is more commonly utilized in a qualitative research study. Applying openness encourages the researcher to adopt an open stance with sensitivity to the meaning of the lived experiences while having curiosity and maintaining an open mind when searching for meaning. (Sundler et al., 2019).

Due to this study asking only a singular qualitative question, I primarily applied the principle of openness to guide my efforts examining the information collected from this question. The principles of openness guided my efforts to organize information into categories based on similarities found in the text submitted by participants in this study. Once again, the aim of this

question was to learn, even a little, about a Latina woman's perinatal experience during a global pandemic.

Chapter 4

Results

Univariate Analysis

Table 2 details the means, standard deviations, skewness, and kurtosis for all continuous variables assessed in this study. It is noteworthy that a portion of the participants in this study showed elevated levels of PRA and a leaning toward an Anglo orientation as measured by the ARSMA-II. The Anglo orientation is indicated by higher scores in the “Slightly Anglo Oriented Bicultural” category, which shows a preference for Anglo influenced language, ideas, attitudes, customs, and behaviors. Hence, for a portion of participants in this study, a stronger alignment with an Anglo orientation is associated with higher the levels of PRA.

Table 2

Descriptive Statistics for Measures

Measure	M	SD	Skewness		Kurtosis	
			Statistic	SE	Statistic	SE
PRAQ-R2	35.11	1.083	0.682	0.327	0.415	0.644
ARSMA-II	0.7154	0.13334	0.442	0.327	0.077	0.644
MBS	60.77	2.018	-0.165	0.327	0.002	0.644
SCSORF	27.79	0.973	-0.696	0.327	0.521	0.644
No. of Pregnancies	1.96	0.175	1.36	0.327	1.263	0.644
MOR	51.11	1.572	0.903	0.327	0.362	0.644

Note. $N = 53$. M and SD are used to represent mean and standard deviation, respectively. PRAQ-R2 = The Pregnancy Related Anxiety Questionnaire – Revised.

Bivariate Analysis

I surveyed 53 participants in this study about their level of PRA associated with acculturation, religiosity, marianismo, and their relationship with their healthcare provider. Results of the Pearson correlational analysis indicate that a significant positive relationship exists between PRA and acculturation ($r = .377$, $p = .005$), suggesting that the higher the acculturation score (i.e., more Anglo-oriented), the higher the PRA. Details are shown in Table 3.

Table 3

Correlations

Variable		1	2	3	4	5
1. Relationship with Health Care Provider	Pearson Correlation	1	0.054	0.065	0.028	0.142
	Sig. (2-tailed)		0.701	0.62	0.831	0.28
2. Acculturation	Pearson Correlation		1	-0.096	-0.143	.377**
	Sig. (2-tailed)			0.495	0.309	0.005
3. Marianismo	Pearson Correlation			1	0.211	0.001
	Sig. (2-tailed)				0.106	0.996
4. Religiosity	Pearson Correlation				1	-0.086
	Sig. (2-tailed)					0.514
5. PRA	Pearson Correlation					1
	Sig. (2-tailed)					

Note. $N = 53$. **indicates $p < .05$. ***indicates $p < .01$.

Research Question 1: Of acculturation, religiosity, and marianismo, which factor predicts the greatest variance in PRA in Latina women aged 18 and up?

To answer Research Question 1, I performed a hierarchical regression to assess the association between the independent variables (acculturation, religiosity, marianismo) with the amount of variance of PRA, the dependent variable. I tested the relevant assumptions of this statistical analysis, prior to conducting a hierarchical regression. I deemed a sample size of 53 adequate given three independent variables to be included in the analysis (Tabachnick & Fidell, 2003). The assumption of singularity was also met as the independent variables (acculturation, religiosity, marianismo) were not a combination of other independent variables. An examination of correlations revealed that no independent variables highly correlated; however, I determined the assumption of multicollinearity was met as the collinearity statistics (i.e., tolerance and VIF) were all within acceptable limits (Coakes, 2005; Hair et al., 1998). An examination of the Mahalanobis distance scores indicated no multivariate outliers. Residual and scatter plots indicated the assumptions of normality, linearity, and homoscedasticity were all satisfied (Hair et al., 1998; Pallant, 2001).

In the first step (Model 1), I examined religiosity and marianismo to assess the amount of variability in PRA and control for acculturation. Results showed that religiosity and marianismo account for 2% of variance in PRA: R squared change = .020, F change (2, 50) = .512, $p < .001$. In the second step (Model 2), I entered acculturation along with religiosity and marianismo to assess the amount of variability in PRA as explained by acculturation. Results showed that the amount of variance accounted for by acculturation was statistically significant: R squared change = .154, F change (1,49) = 7.756, $p < .001$. Hence, acculturation accounts for 15.4% of variance in PRA. Table 4 provides further details.

Table 4*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2
1	.142 ^a	.020	-.019	7.963	0.020	.512	2	50
2	.392 ^b	0.154	0.102	7.474	0.134	7.756	1	49

Note. (a) Predictors: (Constant), Religiosity, marianismo; (b) Predictors: (Constant), Acculturation; (c) Dependent variable: Pregnancy related anxiety.

Research Question 2: What is the relationship between the number of pregnancies and PRA?

I conducted a Spearman rho and t-test to examine Research Question 2. A Spearman rho correlation is the appropriate analysis when one or both variables are ordinal, but it can be used with scale variables. The Spearman rho findings did not show a significant relationship between parity and PRA. Table 5 shows results of Spearman's rho correlation.

Table 5*Parity and PRA: Spearman's rho Correlation*

		Total PRAQ-R	No. of Pregnancies
Total PRAQ-R	Correlation Coefficient	1	-0.161
	Sig. (2-tailed)		0.220
	N	53	53
No. of Pregnancies	Coefficient	-0.161	1
	Sig. (2-tailed)	0.220	
	N	53	53

Note. $N = 53$; PRAQ-R = The Pregnancy Related Anxiety Questionnaire-Revised

I calculated the t-test to determine if there was a significant difference between participants who were pregnant for the first time and those who were pregnant for the second and/or more times regarding PRA. First, I examined PRA scores for all participants ($n = 53$).

Results were not statistically significant ($p = .082$). Next, I categorized participants with women pregnant for the first time ($n = 31$) as Level 1 and women pregnant for the second time ($n = 14$) as Level 2. Examination of group means found the mean for PRA scores was higher for women pregnant for the first time ($M = 37.29$, $SD = 8.537$) compared to women pregnant for the second time ($M = 31.71$, $SD = 5.150$; see Table 6). Based on this result, I performed an independent samples t test. An examination of Levene's test revealed that the data did not violate homogeneity and that equal variances were assumed. Results revealed a trend toward significance between the two group means ($t(53) = 2.25$, $p = .029$; see Table 7). To evaluate the effect size, I ran a Cohen's d , which indicated a medium effect size (Cohen, 1988).

Table 6*Group Statistics*

IV	Level	n	M	SD	SEM
1st time pregnancy	1	31	37.29	8.537	1.533
2nd time pregnancy	2	14	31.71	5.15	1.377

Table 7*Independent Samples Test*

Item	Levene's Test	Sig.	t	df	Sig. (two-tailed)
PRAQ-R	Equal Variances Assumed	.079	2.257	43	.029*
	Equal variances not assumed		2.706	39.153	.010

Note. * $p < .05$; PRAQ-R = The Pregnancy Related Anxiety Questionnaire-Revised.

Research Question 3: What is the relationship between the interaction Latina women have with their primary care provider and/or midwife (partera) and PRA?

To address Research Question 3, I ran a Pearson product-moment r correlation to examine the relationship between a pregnant woman and her primary healthcare provider and/or midwife (partera). The findings show that the relationship was not significant ($p = 0.28$).

Supplemental Qualitative Research Question: What are the experiences and feelings that Latina women have about their pregnancy during the COVID-19 pandemic?

I analyzed data through an iterative process employing methodological principles of openness, questioning pre-understanding, and adopting a reflective attitude (Sundler et al., 2018) to understand and analyze results from the singular, open-ended supplemental qualitative research question. The question presented did not offer choices from which participants could select a response. Instead, each participant could enter a response into an open text box. I read responses several times to become familiar with the data during the first stage of data analysis. At the same time, an open-minded exploration considers the meaning of each participants comments while searching for unique or novel experiences for the purpose of identifying themes. Participants statements included a range of thoughts and feelings varying from favorable to distressing as noted below.

Responses that which included distressing thoughts and feelings are as follows:

“Very difficult”

“Scared out of my whit every time I have to go in”

“Scared to go to the doctor”

“I’m very scared having to go to all appointment alone.”

“I was worried that me and the baby would end up getting sick”

“I was worried something might happen to my child”

“It was bad because people were going in for the COVID so it’s bad”

“I’m stressed and I feel lonely”

Responses that which included favorable thoughts and feelings are as follows:

“Good”

“Everything was just fine”

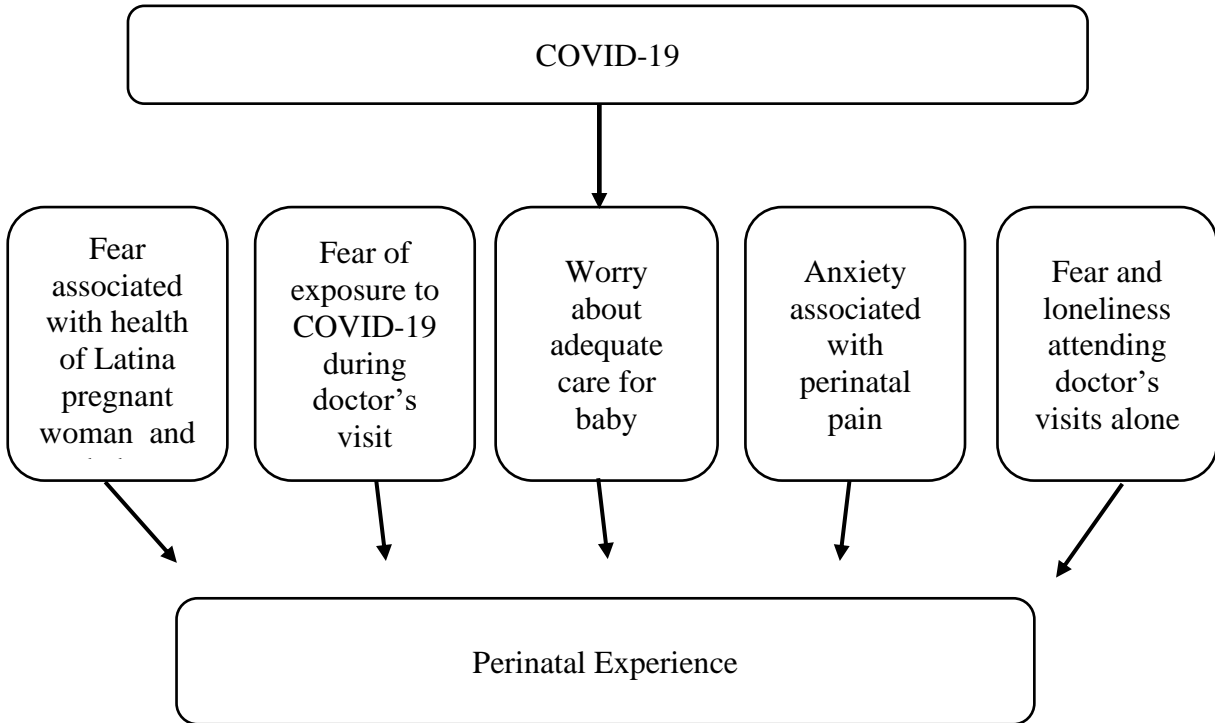
“My experiences have been fine”

“It was easier”

The second stage involved searching for meanings, comparing differences and similarities between meanings, and organizing meanings into patterns while the third stage sought to identify themes (Sundler et al., 2018). Throughout this process, I acknowledged and set aside personal and professional biases as much as possible in order to discover something new that the data revealed. The results of this process identified the following themes amongst participants in this study: a) fear associated with the individual’s and baby’s health, b) fear of exposure and contracting COVID-19 during doctor’s visit, c) worry about adequate care for baby, d) anxiety associated with perinatal pain, e) fear and loneliness about attending doctor’s visit alone, and f) feeling good (see Figure 3).

Figure 3

Latina Participants Perinatal Experience During COVID-19



Chapter 5

Discussion

The purpose of this study was to examine the association between independent variables acculturation, marianismo, and religiosity with the dependent variable, PRA, in Latina women ages 18 and up. Specifically, I examined these independent variables to assess the proportion of variance accounted for by these variables all together and controlling for acculturation. Additionally, parity and a Latina pregnant woman's relationship with her health care provider were examined. Lastly, participants were asked to describe their feelings about their prenatal experience in the context of COVID-19.

The final sample consisted of 53 participants who identified as Latina, Hispanic, or Chicana, were 18 years of age or older, currently pregnant, and without a current or historical diagnosis of severe mental illness. I used a hierarchical regression to analyze the data for Research Question 1 to determine which of the three factors, (acculturation, religiosity, or marianismo) accounted for the greater amount of variance in PRA. I used both a Spearman rho and t-test for Research Question 2 to assess the relationship between parity and PRA. I used a Pearson r for Research Question 3 to assess the relationship between a Latina pregnant woman and her health care provider with PRA. Findings in this study, showed 38 participants (72%), with moderate levels PRA and 14 participants (23.3%) with high levels of PRA. Only one participant rated their PRA as "absolutely not relevant." The mean PRA score for participants was 35.11 (SD = 7.88).

Factors Contributing to Variance in PRA

Results of the hierarchical regression analysis found that acculturation predicted 15.4% of variance in PRA. Neither one of the other two independent variables, religiosity or marianismo, were found to independently explain variance in PRA.

Religiosity and marianismo have previously been found to associate with a woman's psychological well-being during pregnancy (Albuja et al., 2017; Cowchock et al., 2011; Gres-Smith et al., 2013; Magana & Clark, 1995; Mann et al., 2008). Particularly, this study found that, on average, women felt they received a moderate level of respect from their healthcare provider. A moderate level suggests there is room for improvement in the quality of care provided to Latina pregnant women. Hence, this may be an area for future research with Latina women for the purpose of providing culturally attuned prenatal care and providing effective interventions. Further, results of this study showed that most Latina pregnant women experienced distressing thoughts and feelings in connection with COVID-19. A more detailed discussion regarding the findings of the hierarchical regression, Pearson r , and Spearman ρ correlational analysis are provided below. Likewise, a broader account of the qualitative information regarding a Latina woman's perinatal experience during COVID-19 is put forth.

Acculturation

Findings from this study show that acculturation was positively correlated with PRA. The direction of the relationship revealed that participants with higher levels of acculturation associated with an Anglo orientation displayed higher levels of PRA. This result is interesting considering this finding attests to the variability in results of earlier studies evaluating the relationship between acculturation and a woman's mental health during pregnancy (Barcelona de Mendoza et al., 2016; Engle et al., 1990; Preciado & D'Anna-Hernandez, 2017).

On the one hand Preciado and D'Anna-Hernandez's (2017) study of 172 Mexican American participants and Barcelona de Mendoza et al.'s (2016) study of 798 Puerto Rican participants discovered that acculturation was found to be a unique predictor of PRA symptoms. The current study is similar to Preciado and D'Anna-Hernandez's (2017) study in that both studies utilized the ARSMA-II and maintain that Latina pregnant women may feel pressured to assimilate to mainstream culture and modify their cultural beliefs about motherhood with consequences of PRA (Preciado & D'Anna-Hernandez, 2017).

On the contrary, Engle et al.'s (1990) study of 186 Mexican American participants found that acculturation was not directly associated with PRA. Differences in results may be explained by sample size, a participant's country of origin, and/or generational status. In addition, discrepancies in results may be explained by the differing instrumentations. Preciado and D'Anna-Hernandez's (2017) study employed the ARMSA-II, which assesses a participant's affiliation with an Anglo orientation compared to a Mexican Orientation. Barcelona de Mendoza et al.'s (2016) study utilized the Psychological Acculturation Scale, which measures psychological attachment to both mainstream Anglo and Latino cultures considering one's sense of comfort, pride, beliefs and values, and customs.

Whereby Engle et al. (2017) utilized the Szapocznik Bicultural Scale. This instrument assesses one's preference for speaking either English or Spanish language in different settings and one's enjoyment of Latin American and American cultural features such as music, television programs, foods, and celebrations (Engle et al. 1990). Many of the participants in this study identified as second generation ($n = 24, 40\%$) followed by third generation ($n = 13, 21.7\%$) and then fifth generation ($n = 10, 16.7\%$). Although this is an unremarkable finding, it may be valuable information regarding assessment and treatment of PRA. Future research on the

association between acculturation and PRA may consider these variables in the interest of discovering culturally sensitive and relevant interventions utilized at various stages throughout a woman's pregnancy.

Religiosity

In this study, 35% ($n = 21$) of the participants identified as Christian and 30% ($n = 18$) identified as Roman Catholic. The present study did not produce significant findings regarding the relationship between religiosity and PRA. This result is incongruent with findings from previous studies (Cowchock et al., 2011; Magña & Clark, 1995; Mann et al., 2008) which indicated a stronger association between stress or difficulty and dependence on religious or spiritual practices to help cope with distressing emotions (Cowchock et al., 2011). One explanation for this finding is that women with religiosity are closely integrated with the women in their extended families and community who share their values (Magña & Clark, 1995). It seems wise to consider that a woman's affiliation and practice of religiosity is deeply personal thus it is prudent to refrain from applying an all-encompassing definition of religiosity allowing the unique ways religion or spirituality are practiced. This sense of community connects a younger generation of pregnant women with mature women who have experienced childbirth and provide support that enhances pregnancy and childbirth (Magña & Clark, 1995).

Marianismo

I asked participants were asked about their beliefs in comparison with what they learn or actually practice. Some beliefs include, "mother must keep the family unified," "should be pure," "should not speak out against men," and "should be forgiving in all aspects." The present study did not produce significant findings regarding marianismo and its association with PRA. One way to understand these results is that the participants in this study align with the cultural values

as presented by the MBS. Hence, participants' responses reflected their inherent beliefs and values such as "A Latina must be a source of strength for her family," "A Latina should wait until after marriage to have children," or "A Latina should respect men's opinions even when she does not agree." With this, a Latina pregnant woman's expectation about pregnancy in association with marianismo is not an impactful factor to PRA. Again, this is speculative and exploring the relationship between culturally rooted beliefs and values with PRA may be considered in future research.

Parity

I asked participants about parity to examine the relationship between number of pregnancies and PRA. Of note, women pregnant for the first ($n = 31, 51.7\%$) or more ($n = 22, 42\%$) times, did not show significant levels of PRA; however, when women pregnant for the first time ($n = 31, 51.7\%$) were compared with women pregnant for the second time ($n = 14, 23.3\%$) results were statistically significant.

One way to consider this surprising nonsignificant finding between first time pregnancy compared with second or more pregnancies and PRA is to consider that a number of other factors beyond the scope of this study, contribute to PRA during a second, third, fourth, or more pregnancy. It is feasible that factors including miscarriage, age at first pregnancy, or change in familial system or job status contribute to anxiety, thus parity alone is not a strong enough evaluative factor of PRA.

Another way to consider this surprising finding is that there is within group variation of participants in this study. Although obtaining an understanding, albeit limited, of underlying factors contributing to PRA, each Latino culture embodies unique values, beliefs, customs, and practices which need to be considered. As a matter of opinion, for mental health professionals, it

is of the utmost importance to learn about each one of our clients and avoid applying a generalized approach to clinical treatment.

Relationship with Prenatal Healthcare Provider

Additionally, I asked to evaluate their relationship with their healthcare provider and/or midwife (partera) to determine whether quality of care associated with PRA. The current study did not produce significant findings regarding the relationship between a Latina woman and her healthcare provider and/or midwife (partera) with PRA. This result is intriguing considering that a large portion of participants in this study reported moderate to high levels of PRA, align with an Anglo orientation, and reported seeing an ObGyn for their perinatal care. A better understanding of the relationship between a healthcare provider and Latina pregnant woman may assist a clinician in selecting culturally sensitive interventions to decrease symptoms of PRA. While these findings may lack statistical significance concerning the relationship between health care provider and PRA, understanding these results calls for further exploration.

Another way of understanding this outcome may be explained by the questions asked on the MOR. The MOR is designed to capture information regarding the nature of the participants' interactions with their primary healthcare provider and their impact on a person's sense of respect during maternity care by assessing level of comfort, quality of care, and level of comfort asking questions (Vedam et al., 2017). The Pearson r data showed that on average, women in this study felt they received a moderate level of respect from the health care provider. It is conceivable that the construct or idea of being respected by one's healthcare provider and/or midwife (partera) reveals the complexity between culturally honored values and acculturation. Castillo et al. (2010) explained that women are expected to limit their behaviors to societal ascribed gender role norms. It is important to keep in mind the multidirectional influence of

acculturation when assessing PRA in Latina women for the purpose of conducting a culturally attuned assessment and providing culturally respectful interventions.

COVID-19

Although this study was designed to employ a quantitative method, the timely opportunity to gain insight regarding an individual's experience of pregnancy during COVID-19 urged the inclusion of a qualitative question. The subjective comments provided from participants in this study seem to parallel observations in the literature that COVID-19 has impacted levels of anxiety among the pregnant population (Buekens et al., 2020; Corbett et al., 2020; Thapa et al., 2020). Conceivably, several physical complications, including risk of severe disease, preterm deliveries, neonatal mortalities, miscarriage, and the presence of COVID-19, may add to a pregnant individual's psychological stress (Thapa et al., 2020).

Clinical Implications

It is important to keep in mind that the cultural factors investigated may not be generalizable amongst the sample included in this study. There is important and meaningful heterogeneity amongst women with origins stemming from Latin countries and effort should be made to understand cultural beliefs, values, and practices for each woman. Though efforts were made to select culturally applicable factors, it is feasible that the meaning, value, and/or understanding of each factor may vary across participants in this study. Implications and recommendations for clinical practice include the important step of establishing rapport and trust, especially if the clinician identifies with a culture or ethnic group different from the client.

At an early stage, the clinician should conduct a thorough assessment regarding each Latina pregnant woman's level of PRA. This will ideally occur during the first trimester (weeks 0 – 13). Once the level of PRA is known, the next recommended step is to work with her to

identify and provide an appropriate level of intervention for the purpose of reducing (or preventing) symptoms of PRA. It is recommended that the clinician inquire and invite a dialogue with the client to balance any power differential while working together to identify culturally established practices, she feels will assist her in managing symptoms of PRA. Further, the clinician will want to learn more about her support system, provide accessible culturally attuned community resources including, yet not limited, to Spanish and English language prenatal classes, mother's support groups, as well as additional medical and mental health providers to be utilized for psychoeducation and preventative efforts.

Limitations

There were several limitations in this study. First, I utilized a non-parametric method and collected data at one time point. A non-parametric method makes assumptions about the population and is considered less statistically powerful. Thus, there was a smaller probability contained within this method that the variables investigated would show a relationship with PRA when, in fact, they may truly be associated. Second, generational differences were not examined. Third, the MOR, utilized to assess the association between a woman and her relationship with her primary healthcare provider and/or midwife (partera) is designed to assess quality of care and safety of the participant's maternity care with regard for respectful or disrespectful care and right to autonomy. As noted above, these constructs may be limited with regard for culturally sensitive social norms and expectations between Latina women and their primary healthcare provider and/or midwife (partera).

Future Research

Future research should focus on investigating the presence of PRA across diverse populations inclusive of varying sociodemographic features to further establish PRA as a discrete

syndrome. At the same time, inquiries into the relationship between PRA and Latina women's culturally honored perinatal customs should be further studied as to develop appropriate assessments that can promote early detection of PRA symptoms.

This study's cross-sectional design did not allow for data to be collected at multiple time points. It is possible that symptoms of PRA are present at varying points throughout an individual's pregnancy and are temporary. Future research may seek to explore trait or state like symptoms of PRA in association with parity and number of weeks pregnant.

Although I utilized a quantitative design in this study, participants' subjective experiences showed a relationship between COVID-19 and PRA. Future research may seek to further explore the relationship between COVID-19 and PRA as this may identify environmental factors influencing levels of PRA. Additionally, further observations between COVID-19 and PRA may reveal important findings regarding the relationship between medical concerns and PRA.

Conclusions

This study found amongst participants; acculturation was found to be the stronger factor contributing to PRA. Further, the results showed that the more closely a participant identified with Anglo oriented ideas, beliefs, attitudes, and behaviors the higher their levels of PRA. Religiosity and marianismo did not show significant association with PRA. Concerning parity and the relationship with a primary health care provider and/or midwife (partera), results did not show statistical significance

Regarding the qualitative question, results showed that many participants expressed concerns regarding their physical health and the health of their baby, fear of attending doctor's visits alone, worries about preparing for the birth of the baby, and contracting COVID-19.

It is worth restating, that this study utilized a qualitative question for the intention of learning about a participant's subjective experience of being pregnant during a global pandemic. It is possible that the retention of cultural practices may serve as a protective factor against PRA and in future studies, should be considered as a relevant psychotherapeutic treatment. There were several limitations in this study including the method, participant characteristics, cultural constructs, and instrumentation. Future research may seek to further investigate PRA as a distinct construct. Likewise, prospective studies may seek to better understand cultural influences and time-honored perinatal practices among Latina individuals as well as across diverse populations for the purpose of supporting healthcare professionals in providing culturally sensitive perinatal care.

References

- Albuja, A. F., Lara, M. A., Navarrete, L. & Nieto, L. (2017). Social support and postpartum depression revisited: The traditional female role as moderator among Mexican women. *Sex Roles* 77, 209–220
- Alhusen, J. L. (2008). A literature update on maternal-fetal attachment. *Journal of Obstetric and Gynecologic and Neonatal Nursing*, 2008, 37(3). 315–328. <https://doi.org/10.1111/j.1552-6909.2008.00241.x>
- Alhusen, J. L., Gross, D., Hayat, M. J., Woods, A. B., & Sharps, P. W. (2012). The influence of maternal-fetal attachment and health practices on neonatal outcomes in low-income, urban women. *Research in Nursing and Health*, 35(2), 112–120. <https://doi.org/10.1002/nur.21464>
- Allen, N. B., Lewinsohn, P. M., & Seeley, J. R. (1998). Prenatal and perinatal influences on risk for psychopathology in childhood and adolescence. *Development and Psychopathology*, 10(3), 513–529. <https://doi.org/10.1017/S0954579498001722>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Anhalt, K., Telzrow, C. F., & Brown, C. L. (2007). Maternal stress and emotional status during the perinatal period and childhood adjustment. *School Psychology Quarterly*, 22(1), 74–90. <https://doi.org/10.1037/1045-3830.22.1.74>
- Barcelona de Mendoza, V., Harville, E., Theall, K., Buekens, P., & Chasan-Taber, L. (2016). Effects of acculturation on prenatal anxiety among Latina women. *Archives of Women's Mental Health*, 19(4), 635–644. <https://doi.org/10.1007/s00737-016-0605-9>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models

- using lme4: arXiv preprint arXiv, *Journal of Statistical Software*.
<https://doi.org/10.18637/jss.v067.io1>
- Baud, D., Greub, G., Favre, G., Gengler, C., Jatton, K., Dubruc, E., & Pomar, L. (2020). Second-trimester miscarriage in a pregnant woman with SARS-CoV-2 infection. *JAMA*, 323(21), 2198–2200. <https://doi:10.1001/jama.2020.7233>
- Bayrampour, H., Ali, E., McNeil, D. A., Benzies, K., MacQueen, G., & Tough, S. (2016). Pregnancy-related anxiety: A concept analysis. *International Journal of Nursing Studies*, 55, 115-130. <https://doi.org/10.1016/j.ijnurstu.2015.10.023>
- Bayrampour, H., Vinturache, A., Hetherington, E., Lorenzetti, D. L., & Tough, S. (2017). Risk factors for antenatal anxiety: A systematic review of the literature. *Journal of Reproductive and Infant Psychology*, 36(5), 476-503.
<https://doi.org/10.1080/02646838.2018.1492097>
- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods*, 43(3), 800–813.
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, 20(3), 351–368.
- Berkowitz, G. S., & Papiernik, E. (1993). Epidemiology of preterm birth. *Epidemiologic Reviews*, 15(2), 414-443. <https://doi.org/10.1093/oxfordjournals.epirev.a036128>
- Bilbija, K., & Rodriguez, J. (1995). Our Lady of Guadalupe: Faith and Empowerment among Mexican-American Women. *Hispania*, 78(2), 300. <https://doi.org/10.2307/345412>
- Blackmore, E. R., Gustafsson, H., Gilchrist, M., Wyman, C., & O'Connor, T. G. (2016). Pregnancy-related anxiety: Evidence of distinct clinical significance from a prospective

- longitudinal study. *Journal of Affective Disorders*, 197, 251–258.
<https://doi.org/10.1016/j.jad.2016.03.008>
- Breslin, N., Baptiste, C., Miller, R., Fuchs, K., Goffman, D., Gyamfi-Bannerman, C., & D’Alton, M. (2020). COVID-19 in pregnancy: early lessons. *American Journal of Obstetrics and Gynecology MFM*, 2(2), 100111. <https://doi.org/10.1016/j.ajogmf.2020.100111>
- Britton, J. R. (2008). Maternal anxiety: Course and antecedents during the early postpartum period. *Depression & Anxiety*, 25, 793–800. <https://doi.org/10.1002/da.20325>
- Brouwers, E. P. M., van Baar, A. L., & Pop, V. J. M. (2001). Maternal anxiety during pregnancy and subsequent infant development. *Infant Behavior and Development*, 24(1), 95-106.
[https://doi.org/10.1016/S0163-6383\(01\)00062-5](https://doi.org/10.1016/S0163-6383(01)00062-5)
- Brunton, R. J., Dryer, R., Saliba, A., & Kohlhoff, J. (2019). The initial development of the pregnancy-related anxiety scale. *Women and Birth*, 32(1), e118–e130.
<https://doi.org/10.1016/j.wombi.2018.05.004>
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon’s Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5.
- Buist, A., Gotman, N., Yonkers, K.A., 2011. Generalized anxiety disorder: Course and risk factors in pregnancy. *Journal of Affective Disorders* (131) 1-3, 277–283.
<https://doi.org/10.1016/j.jad.2011.01.003>
- Buultjens, M., Murphy, G., Robinson, P., & Milgrom, J. (2013). The perinatal period: A literature review from the biopsychosocial perspective. *Clinical Nursing Studies*, 1(3).
<https://doi.org/10.5430/cns.v1n3p19>
- Campos, B., Schetter, C. D., Walsh, J. A., & Schenker, M. (2007). Sharpening the focus on

- acculturative change: ARSMA-II, stress, pregnancy anxiety, and infant birthweight in recently immigrated Latinas. *Hispanic Journal of Behavioral Sciences*, 29(2), 209–224.
<https://doi.org/10.1177/0739986307300841>
- Campos, B., Schetter, C. D., Abdou, C. M., Hobel, C. J., Glynn, L. M., & Sandman, C. A. (2008). Familialism, social support, and stress: Positive implications for pregnant Latinas. *Cultural Diversity and Ethnic Minority Psychology*, 14(2), 155–162.
<https://doi.org/10.1037/1099-9809.14.2.155>
- Cannella, B., Yarcheski, A., & Mahon, N. (2018). Meta-analyses of predictors of health practices in pregnant women. *Western Journal of Nursing Research*, 40(3), 425–446.
- Castillo, L., Perez, F., Castillo, R., & Ghosheh, M. (2010). Construction and initial validation of the marianismo beliefs scale. *Counseling Psychology Quarterly*, 23(2), 163–175.
<https://doi:10.1080/09515071003776036>
- Catov, J. M., Abatemarco, D. J., Markovic, N., & Roberts, J. M. (2010). Anxiety and optimism associated with gestational age at birth and fetal growth. *Maternal and Child Health Journal*, 14(5), 758–764. <https://doi.org/10.1007/s10995-009-0513-y>
- Centers for Disease Control and Prevention. (2014). *March of dimes special report: Maternal and infant health in US Hispanic populations: Prematurity and related health indicators*. Retrieved from
https://www.marchofdimes.org/Peristats/pdflib/991/MOD_2014HispanicReport.pdf
- Centers for Disease Control and Prevention. (2016). *Effects of maternal age and age-specific preterm birth rates on overall preterm birth rates — United States, 2007 and 2014*. Retrieved from
<https://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm>

Cervantes, R. C., Padilla, A. M., Napper, L. E., & Goldbach, J. T. (2013). Acculturation-related stress and mental health outcomes among three generations of Hispanic adolescents.

Hispanic Journal of Behavioral Sciences, 35(4), 451–468.

<https://doi.org/10.1177%2F0739986313500924>

Chen, L., Li, Q., Zheng, D., Jiang, H., Wei, Y., Zou, L., Feng, L., Xiong, G., Sun, G., Wang, H., Zhao, Y., & Qiao, J. (2020). Clinical characteristics of pregnant women with Covid-19 in Wuhan, China. *The New England Journal of Medicine*, 382(25), e100(1) – e100(3).

<https://doi:10.1056/NEJMc2009226>.

Chong, S. C., Broekman, B. F., Qiu, A., Aris, I. M., Chan, Y. H., Rifkin-Graboi, A., Law, E., Chee, C. Y. I., Chong, Y-S., Kwek, K. Y. C., Saw, S. M., Gluckman, P. D., Meaney, M. J., & Chen, H. (2016). Anxiety and depression during pregnancy and temperament in early infancy: Findings from a multi-ethnic, Asian, prospective birth cohort study. *Infant Mental Health Journal*, 37(5), 584–598. <https://doi.org/10.1002/imhj.21582>

Coakes, S. (2005) *SPSS: Analysis without Anguish*. 1st ed. Milton, Qld.: Wiley Australia.

Cohen, J. (1988). *Statistical power analysis for the behavior sciences* (2nd ed.). St. Paul, MN: West Publishing Company.

Concha, M., Sanchez, M., de la Rosa, M., & Villar, M. E. (2013). A longitudinal study of social capital and acculturation-related stress among recent Latino immigrants in South Florida. *Hispanic Journal of Behavioral Sciences*, 35(4), 469–485.

<https://doi.org/10.1177/0739986313499005>

Conover, W. J., & Iman, R. L. (1981). Rank transformations as a bridge between parametric and nonparametric statistics. *The American Statistician*, 35(3), 124-129.

Coppock, A. (2018). Generalizing from survey experiments conducted on Mechanical Turk: A

- replication approach. *Political Science Research and Methods*, 1–16.
- Cowchock, F. S., Ellestad, S. E., Meador, K. G., Koenig, H. G., Hooten, E. G., & Swamy, G. K. (2011). Religiosity is an important part of coping with grief in pregnancy after a traumatic second trimester loss. *Journal of Religion and Health*, 50, 901-910. <https://doi.org/10.1007/s10943-011-9528-y>
- Cranley, M. S. (1981). Development of a tool for the measurement of maternal attachment during pregnancy. *Nursing Research*, 30(5), 281–284. <https://doi.org/10.1097/00006199-198109000-00008>
- Cuéllar, I., Arnold, B., & Gonzalez, G. (1995). Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology*, 23, 339–356. [http://dx.doi.org/10.1002/1520-6629\(199510\)23:4<339::AID-JCOP2290230406>3.0.CO;2-7](http://dx.doi.org/10.1002/1520-6629(199510)23:4<339::AID-JCOP2290230406>3.0.CO;2-7)
- Dawson, G., Ashman, S.B., & Carver, L.J. (2000). The role of early experience in shaping behavioral and brain development and its implications for social policy. *Development and Psychopathology*, 12(4), 695–712. <https://doi.org/10.1017/S0954579400004089>.
- DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, 2(3), 292–307. <https://doi.org/10.1037/1082-989X.2.3.292>
- Declercq, E. R., Belanoff, C., & Sakala, C. (2019). Intrapartum care and experiences of women with midwives versus obstetricians in the listening to mothers in California survey. *Journal of Midwifery & Women's Health*, 65(1), 45-55. <https://doi.org/10.1111/jmwh.13027>
- de Onis, M., & Habicht J.P. (1996). Anthropometric reference data for international use: Recommendations from a World Health Organization expert committee. *American*

- Journal of Clinical Nutrition*. 64, 650–658.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5710996/#b0005>
- Dorn, L. D., Susman, E. J., & Petersen, A. C. (1993). Cortisol reactivity and anxiety and depression in pregnant adolescents: A longitudinal perspective. *Psychoneuroendocrinology*, 18(3), 219–239. [https://doi.org/10.1016/0306-4530\(93\)90006-7](https://doi.org/10.1016/0306-4530(93)90006-7)
- Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, 196(4286), 129–136. <https://doi.org/10.1126/science.847460>
- Engle, P. L., Scrimshaw, S. C., Zambrana, R. E., & Dunkel-Schetter, C. (1990). Prenatal and postnatal anxiety in Mexican women giving birth in Los Angeles. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 9(3), 285–299. <https://doi.org/10.1037/0278-6133.9.3.285>
- Ennis, S. R., Rios-Vargas, M., & Albert, N. G. (2011, May). *The Hispanic population: 2010: 2010 Census Briefs*. (Issue Brief No. C2010BR-04). Retrieved from <https://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf>
- Fakari, F. R., & Simbar, M. (2020). Coronavirus pandemic and worries during pregnancy; A letter to the editor. *Archives of Academic Emergency Medicine*, 8(1), e21. Retrieved from <http://journals.sbmu.ac.ir/aaem>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2013). G*Power Version 3.1.9.4 [computer software]. Universität Kiel, Germany. Retrieved from <http://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower.html>
- Field, T. (2017). Prenatal anxiety effects: A review. *Infant Behavior and Development*, 49, 120-

128. <https://doi.org/10.1016/j.infbbeh.2017.08.008>
- Fidell, L. S. & Tabachnick, B. D. (2003). Preparatory data analysis. Part one. Foundations of research issues: Study design, data management, data reduction, and data synthesis. *Handbook of Psychology*. <https://doi.org/10.1002/0471264385>
- Fleuriet, K. J. (2009). La Tecnología Y las monjitas: Constillations of authoritative knowledge at religious birthing center in south Texas. *Medical Anthropology Quarterly*, 23 (3), 212–234. <https://doi.org/10.1111/j.1548-1387.2009.01057.x>
- Fleuriet, K. J., & Sunil, T. S. (2014). Perceived social stress, pregnancy-related anxiety, depression and subjective social status among pregnant Mexican and Mexican American Women in South Texas. *Journal of Health Care for the Poor and Underserved*, 25(2), 546–561. <https://doi.org/10.1353/hpu.2014.0092>
- Flores, E., Tschann, J. M., Dimas, J. M., Bachen, E. A., Pasch, L. A., & De Groat, C. L. (2008). Perceived discrimination, perceived stress, and mental and physical health among Mexican-origin adults. *Hispanic Journal of Behavioral Sciences*, 30(4), 401–424. <https://doi.org/10.1177/0739986308323056>
- Flores, L., Carrubba-Whetstine, M., & Good, G. E. (2006). Feminism and American adolescent women examining the psychometric properties of two measures. *Hispanic Journal of Behavioral Sciences*, 28(1), 48-64. <https://www.researchgate.net/deref/http%3A%2F%2Fdx.doi.org%2F10.1177%2F0739986305283222>
- Foley, S. (2018). Great expectations? Do mothers' and fathers' prenatal thoughts and feelings about the infant predict parent-infant interaction quality? A meta-analytic review. *Developmental Review*, 48, 40–54. <https://doi.org/10.1016/j.dr.2018.03.007>

- Frey, M. T., Meaney-Delman, D., Bowen, V., Yazdy, M. M., Watkins, S. M., Thorpe, P. G., & Honein, M. A. (2020). Surveillance for emerging threats to pregnant women and infants. *Journal of Women's Health, 28*(8). <https://doi.org/10.1089/jwh.2019.7943>
- Gamblin, B. W., Winslow, M. P., Lindsay, B., Newsom, A. W., & Kehn, A. (2017). Comparing in-person, Sona, and Mechanical Turk measurements of three prejudice-relevant constructs. *Current Psychology, 36*(2), 217–224.
- Gil, R. M., & Vazquez, C. I. (1996). *The maria paradox: How Latinas can merge old world traditions with new world self-esteem*. United States: Open Road Media E-books.
- Glasheen, C., Richardson, G.A., & Fabio, A. (2010). A systematic review of the effects of postnatal maternal anxiety on children. *Archives of Women's Mental Health, 13*, 61–74. <https://doi.org/10.1007/s00737-009-0109-y>.
- Glazer, G. (1980). Anxiety levels and concerns among pregnant women. *Research in Nursing and Health, 3*(2), 107-113. <https://doi.org/10.1002/nur.4770030305>
- Glazier, R.H., Elgar, F.J., Goel, V., & Holzapfel, S. (2004). Stress, social support, and emotional distress in a community sample of pregnant women, *Journal of Psychosomatic Obstetrics & Gynecology, 25*:3-4, 247-255, [https://doi: 10.1080/01674820400024406](https://doi.org/10.1080/01674820400024406)
- Glover, V., & Capron, L. (2017). Prenatal parenting. *Current Opinion in Psychology, 15*, 66–70. <https://doi.org/10.1016/j.copsyc.2017.02.007>
- Goecke, T. W., Voigt, F., Faschingbauer, F., Spangler, G., Beckmann, M. W., & Beetz, A. (2012). The association of prenatal attachment and perinatal factors with pre- and postpartum depression in first-time mothers. *Archives of Gynecology and Obstetrics, 286*(2), 309–316. <https://doi.org/10.1007/s00404-012-2286-6>
- Goodman, J. H., Chenausky, K. L., & Freeman, M. P. (2014). Anxiety disorders

- during pregnancy: A systematic review. *The Journal of Clinical Psychiatry*, 75(10), e1153-e1184. <https://doi.org/10.4088/JCP.14r09035>
- Gress-Smith, J. L., Roubinov, D. S., Tanaka, R., Cirnic, K., Gonzales, N., Enders, C., & Luecken, L. J. (2013). Prenatal expectations in Mexican American women: Development of a culturally sensitive measure. *Archives of Women's Mental Health*, 16(4), 303–314. <https://doi.org/10.1007/s00737-013-0350-2>
- Grote, N. K., Bridge, J. A., Gavin, A. R., Melville, J. L., Iyengar, S., & Katon, W. J. (2010). A meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. *Archives of General Psychiatry*, 67(10), 1012–1024. <https://doi.org/10.1001/archgenpsychiatry.2010.111>
- Hair, J. F., Tatham, R. L., & Anderson, R. E. (1998). *Multivariate Data Analysis*. (5th edition.). Prentice Hall.
- Hamilton, B., Martin, J., Ventura, S., Sutton, P., & Mecacker, F. (2005). Births: preliminary data for 2004. National vital statistics reports; vol 54 no 8. Hyattsville, MD: National Center for Health Statistics. 2006.
- Handelzalts, J. E., Preis, H., Rosenbaum, M., Gozlan, M., & Benyamini, Y. (2018). Pregnant women's recollections of early maternal bonding: Associations with maternal-fetal attachment and birth choices. *Infant Mental Health Journal*, 39(5), 511–521. <https://doi.org/10.1002/imhj.21731>
- Havland, I., Lundholm, C., Lichtenstein, P., Neiderhiser, J. M., Ganiban, J. M., Spotts, E. L., Walum, H., Reiss, D., & Almqvist, C. (2013). The observed association between maternal anxiety and adolescent asthma: children of twin design suggest familial effects. *Plos One*, 8(6), e66040. <https://doi: 10.1371/journal.pone.0066040>

Hirshfield-Becker, D. R., Biederman, J., Faraone, S. V., Robin, J. A., Friedman, D., Rosenthal, J.

M., & Rosenbaum, J. F. (2004). Pregnancy complications associated with childhood anxiety disorders. *Depression & Anxiety, 19*(3), 152-162.

<https://doi.org/10.1002/da.20007>

Hoffman, M. C., Mazzoni, S. E., Wagner, B. D., Laudenslager, M. L., & Ross, R. G. (2016).

Measures of maternal stress and mood in relation to preterm birth. *Obstetrics and Gynecology, 127*(3), 545–552. <https://doi.org/10.1097/AOG.0000000000001287>

Huizink, A. C., Robles de Medina, P. G., Mulder, E. J., Visser, G. H., & Buitelaar, J. K. (2002).

Psychological measures of prenatal stress as predictors of infant temperament. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*(9), 1078–1085.

<https://doi.org/10.1097/00004583-200209000-00008>

Huizink, A. C., Robles de Medina, P. G., Mulder, E. J., Visser, G. H., & Buitelaar, J. K. (2003).

Stress during pregnancy is associated with developmental outcome in infancy. *Journal of Child Psychology and Psychiatry, 44*(6), 810–818. [https://doi.org/10.1111/1469-](https://doi.org/10.1111/1469-7610.00166)

[7610.00166](https://doi.org/10.1111/1469-7610.00166)

Huizink A. C., Mulder, E., Robles de Medina, P., Visser, G., Buitelaar, J. (2004). Is pregnancy anxiety a distinctive syndrome? *Early Human Development, 79*(2), 81–91.

<https://doi.org/10.1016/j.earlhumdev.2004.04.014>

Huizink, A. C., Menting, B., Oosterman, M., Verhage, M. L., Kunseler, F. C. & Schuengel, C.

(2014). The interrelationship between pregnancy-specific anxiety and general anxiety across pregnancy: A longitudinal study. *Journal of Psychosomatic Obstetrics &*

Gynecology, 35(3), 92–100. <https://doi.org/10.3109/0167482X.2014.944498>

Huizink, A. C., Delforterie, M. J., Scheinin, N. M., Tolvanen, M., Karlsson, L., & Karlsson, H.

- (2016). Adaption of pregnancy anxiety questionnaire–revised for all pregnant women regardless of parity: PRAQ-R2. *Archives of Women's Mental Health*, 19(1), 125–132. <https://doi.org/10.1007/s00737-015-0531-2>
- Humes, K. R., Jones, N. A., & Ramirez, R. R. (2011, March). *Overview of race and Hispanic origin: 2010*. (Issue Brief No. C2010BR-02). Retrieved from <https://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>
- Istvan, J. (1986). Stress, Anxiety, and Birth Outcomes. A critical review of the evidence. *Psychological Bulletin*, 100(3), 331–348. <https://doi.org/10.1037/0033-2909.100.3.331>
- Keefe, R. H., Brownstein-Evans, C., & Rouland Polmanteer, R. (2016). “I find peace there”: How faith, church, and spirituality help mothers of colour cope with postpartum depression. *Mental Health, Religion & Culture*, 19, 722–733. <https://doi:10.1080/13674676.2016.1244663>
- Kendell, R. E., Chalmers, J. C., & Platz, C. (1987). Epidemiology of puerperal psychoses. *British Journal of Psychiatry*, 150, 662–73. <https://pdfs.semanticscholar.org/22c7/1e4d588187f878446661d798ec2f94d65714.pdf>
- Kim, Y., & Dee, V. (2017). Self-care for health in rural Hispanic women at risk for postpartum depression. *Maternal and Child Health Journal*, 21(1), 77–84. <https://doi.org/10.1007/s10995-016-2096-8>
- Krogstad, J. M. & Lopez, M. H. (2014, April 29). Hispanic nativity shift: U.S. births drive population growth as immigration stalls. *Pew Research Center's Hispanic Trends*. <https://www.pewresearch.org/hispanic/2014/04/29/hispanic-nativity-shift/>
- Liang, H., & Acharya, G. (2020). Novel corona virus (COVID-19) in pregnancy: What clinical

- recommendations to follow? *Acta Obstetricia et Gynecologica Scandinavica*, 99(4), 439-442. <https://doi.org/10.1111/aogs.13836>
- Lindsay, A. C., Wallington, S. F., Greaney, M. L., Tavares Machado, M. M., & De Andrade, G. P. (2017). Patient-provider communication and counseling about gestational weight gain and physical activity: A qualitative study of the perceptions and experiences of Latinas pregnant with their first child. *International Journal of Environmental Research and Public Health*, 14(11). <https://doi.org/10.3390/ijerph14111412>
- Lara, M.A., Navarro, C., & Navarrete, L. (2010). Outcome results of a psycho-educational intervention in pregnancy to prevent PPD: A randomized control trial. *Journal of Affective Disorders*, 122, 109–117. [https://doi: 10.1016/j.jad.2009.06.024](https://doi:10.1016/j.jad.2009.06.024)
- Lara-Cinisomo, S., Wood, J., & Fujimoto, E. M. (2018). 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, 557-567. <https://doi.org/10.1007/s00737-018-0920-4>
- Levin, J. S. (1991). Religious involvement among Hispanic and Black mothers of newborns. *Hispanic Journal of Behavioral Sciences*, 13(4), 436–447. <https://doi.org/10.1177/07399863910134007>
- Lipson, J. G., & Dibble, S. L. (Eds.). (2005). *Culture & clinical care*. San Francisco, CA: UCSF Nursing Press.
- Lobel, M., Cannella, D. L., Graham, J. E., DeVincent, C., Schneider, J., & Meyer, B. A. (2008). Pregnancy-Specific Stress, Prenatal Health Behaviors, and Birth Outcomes. *Health Psychology*, 27(5), 604–615. <https://doi.org/10.1037/a0013242>
- Lobel, M., Dunkel-Schetter, C., & Scrimshaw, S. C. (1992). Prenatal maternal stress and

- prematurity: A prospective study of socioeconomically disadvantaged women. *Health Psychology, 11*(1), 32–40. <https://doi.org/10.1037//0278-6133.11.1.32>
- Lopez, M. H., Gonzalez-barrera, A., & Cuddington, D. (2013). Diverse origins: The nation's 14 largest Hispanic-origin groups. *Pew Hispanic Center*, (202), 2013–2016. Retrieved from <http://www.pewhispanic.org/2013/06/19/diverse-origins-the-nations-14-largest-hispanic-origin-groups/>
- Lubin, B., Gardener, S. H., & Roth, A. (1975). Mood and somatic symptoms during pregnancy. *Psychosomatic Medicine, 37*(2), 136–146. <https://psycnet.apa.org/doi/10.1097/00006842-197503000-00004>
- Lunenfeld, E., Rosenthal, J., Larholt, K. M., & Insler, V. (1984). Childbirth experience – psychological, cultural and medical associations. *Journal of Psychosomatic Obstetrics and Gynecology, 3*(3–4), 165–171. <https://doi.org/10.3109/01674828409017458>
- Madhavanprabhakaran, G. K., D'Souza, M. S., & Nairy, K. S. (2015). Prevalence of pregnancy anxiety and associated factors. *International Journal of Africa Nursing Sciences, 3*, 1–7. <https://doi.org/10.1016/j.ijans.2015.06.002>
- Magaña, A., & Clark, N. M. (1995). Examining a paradox: Does religiosity contribute to positive birth outcomes in Mexican American populations? *Health Education & Behavior, 22*(1), 96–109. <https://doi.org/10.1177/109019819502200109>
- Mancuso, R. A., Schetter, C. D., Rini, C. M., Roesch, S. C., & Hobel, C. J. (2004). Maternal prenatal anxiety and corticotropin-releasing hormone associated with timing of delivery. *Psychosomatic Medicine, 66*(5), 762–769. <https://doi.org/10.1097/01.psy.0000138284.70670.d5>
- Mann, J. R., McKeown, R. E., Bacon, J., Vesselinov, R., & Bush, F. (2008). Religiosity,

- spirituality and antenatal anxiety in Southern U.S. women. *Archives of Women's Mental Health*, 11, 19–26. <https://doi.org/10.1007/s00737-008-0218-z>
- March of Dimes, Healthy Moms. Strong Babies. (2000). *Perinatal profile: Statistics for monitoring state maternal and Infant Health, 1999 & 2000 editions* [Data file]. Retrieved from <https://www.marchofdimes.org/peristats/Peristats.aspx>
- Marmot, M., Wilkinson, R. G. (1999). *Social determinants of health*. New York: Oxford Univeristy Press.
- Masjoudi, M., Aslani, A., Khazaeian, S., & Fathnezhad-Kazemi, A. (2020). Explaining the experience of prenatal care and investigating the association between psychological factors with self-care in pregnant women during COVID-19 pandemic: A mixed methods study protocol. *Reproductive Health*, 17(1), 98. <https://doi: 10.1186/s12978-020-00949-0>
- Matthey, S., Barnett, B., Howie, P., & Kavanagh, D.J. (2003). Diagnosing postpartum depression in mothers and fathers: Whatever happened to anxiety? *Journal of Affective Disorders*, 74(2), 139–147. [https://doi.org/10.1016/S0165-0327\(02\)00012-5](https://doi.org/10.1016/S0165-0327(02)00012-5)
- McCool, W. F., Susman, E. J., & Susman, E. J. (1994). Cortisol reactivity and self-report anxiety in the antepartum: Predictors of maternal intrapartal outcomes in gravid adolescents. *Journal of Psychosomatic Obstetrics and Gynecology*, 15(1), 9–18. <https://doi.org/10.3109/01674829409025624>
- McMahon, C., Barnett, B., Kowalenko, N., Tennant, C., & Don, N. (2001). Postnatal depression, anxiety and unsettled infant behaviour. *Australian and New Zealand Journal of Psychiatry*, 35(5):581–588. <https://doi.org/10.1080%2F0004867010060505>
- Menard, S. (2009). *Logistic regression: From introductory to advanced concepts and applications*. Sage Publications. Thousand Oaks, CA.

- Moser, K., Li, L., & Power, C. (2003). Social inequalities in low birth weight in England and Wales: Trends and implications for future population health. *Journal of Epidemiology and Community Health, 57*(9), 687–691. <https://doi.org/10.1136/jech.57.9.687>
- Mullinix, K. J., Leeper, T. J., Druckman, J. N., & Freese, J. (2015). The generalizability of survey experiments. *Journal of Experimental Political Science, 2*(2), 109–138.
- Muñoz, R.F., Le, H.N., Ghosh Ippen, C., Diaz, M.A., Urizar, G., Soto, J., Mendelson, T., Delucchi, K., & Lieberman, A. (2007). Prevention of postpartum depression in low-income women: Development of the Mamás y Bebés/Mothers and Babies Course. *Cognitive and Behavioral Practices, 14*(1), 70–83. <https://doi.org/10.1016/j.cbpra.2006.10.001>
- Murray de López, J. (2015). Conflict and reproductive health in urban Chiapas: Disappearing the partera empírica. *Anthropology Matters Journal, 16*(1), 2 – 27. <https://doi.org/10.22582/am.v16i1.339>
- Nicol-Harper, R., Harvey, A. G., & Stein, A. (2007) Interactions between mothers and infants: impact of maternal anxiety. *Infant Behavior and Development, 30*(1):161–167. <https://doi.org/10.1016/j.infbeh.2006.08.005>
- Niemann, Y. F. (2004). Stereotypes of Chicanas and Chicanos: Impact on family functioning, individual expectations, goals, and behavior. In R. J. Velasquez, L. M. Arellano, & B. W. McNell (Eds.), *The handbook of Chicana/o psychology and mental health* (pp. 61–82). Mahwah, NJ: Erlbaum.
- Norbeck, J. S., & Tilden, V. P. (1983). Life stress, social support, and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study. *Journal of Health and Social Behavior, 24*, 30-46. <https://doi: 10.2307/2136301>

- Novick, G. (2009). Womens' experience of prenatal care: An integrative review. *Journal of Midwifery & Women's Health, 54*(3), 226-237. <https://doi:10.1016/j.jmwh.2009.02.003>
- Núñez, A., González, P., Talavera, G. A., Sanchez-Johnsen, L., Roesch, S. C., Davis, S. M., Arguelles Womack, V. Y., Ostrovsky, N. W., Ojeda, L., Penedo, F. J. & Gallo, L. C. (2016). Machismo, marianismo, and negative cognitive-emotional factors: Findings from the Hispanic community health study/study of Latinos sociocultural ancillary study. *Journal of Latina/o Psychology, 4*(4), 202–217. <https://psycnet.apa.org/doi/10.1037/lat0000050>
- O'Connor, T. G., Winter, M. A., Hunn, J., Carnahan, J., Pressman, E. K., Glover, V., Robertson-Blackmore, E., Moynihan, J. A., Lee, F. E-H., & Caserta, M. T. (2013). Prenatal maternal anxiety predicts reduced adaptive immunity in infants. *Brain, Behavior, and Immunity, 32*, 21–28.
- Orr, S. T., Blazer, D. G., James, S. A., & Reiter, J. P. (2007). Depressive symptoms and indicators of maternal health status during pregnancy. *Journal of Women's Health, 16*(4), 535–542. <https://doi.org/10.1089/jwh.2006.0116>
- Ortiz, F. M. (2005). History of midwifery in New Mexico: Partnership between curandera-parteras and the New Mexico department of health. *Journal of Midwifery Women's Health, 50*(5), 411-417. <https://doi.org/10.1016/j.jmwh.2004.12.001>
- Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluation, 8*(2), 1-9.
- Pajulo, M., Tolvanen, M., Karlsson, L., Halme-Chowdhury, E., Ost, C., Luyten, P., Mayes, L., & Karlsson, H. (2015). The prenatal parental reflective functioning questionnaire: Exploring factor structure and construct validity of a new measure in the Finn brain birth cohort

- pilot study. *Infant Mental Health Journal*, 36(4), 399–414. [https://doi:10.1002/imhj.21523](https://doi.org/10.1002/imhj.21523)
- Paneth, N. S. (1995). The problem of low birth weight. *The Future of Children*, 5(1), 19-34. [doi:10.2307/1602505](https://doi.org/10.2307/1602505)
- Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on Amazon Mechanical Turk. *Judgment and Decision Making*, 5(5), 411–419.
- Pattenden, S., Dolk, H., & Vrijheid, M. (1999). Inequalities in low birth weight: Parental social class, area deprivation, and “lone mother” status. *Journal of Epidemiology and Community Health*, 53(6), 355–358. <https://doi.org/10.1136/jech.53.6.355>
- Perez, R. (1982). Stress and coping as determinants of adaptation to pregnancy in Hispanic women. Unpublished doctoral dissertation, University of California, Los Angeles.
- Peréz-Escamilla, R., & Putnik, P. (2007). The role of acculturation in nutrition, life-style, and incidence of type 2 diabetes among Latinos. *Journal of Nutrition*, 137, 860-870. [https://doi:10.1093/jn/137.4.860](https://doi.org/10.1093/jn/137.4.860)
- Piontelli, A. (1992). *From fetus to child: An observational and psychoanalytic study*. United Kingdom: Tavistock/Routledge.
- Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social sciences* (6th ed.). Routledge Academic. <https://doi.org/10.4324/9781315814919>
- Plante, T. G. & Boccaccini, M. T. (1997). The Santa Clara strength of religious faith questionnaire. *Pastoral Psychology*, 45, 375–387. <https://doi.org/10.1007/BF02230993>
- Plante, T. G., Yancey, S., Sherman, A., Guertin, M., & Partdini, D. (1999). Further validation for the Santa Clara Strength of Religious Faith Questionnaire. *Pastoral Psychology*, 48, 11–21. <https://doi.org/10.1023/A:1021950628088>

- Plante, T. G. (2010). The Santa Clara strength of religious faith questionnaire: Assessing faith engagement in a brief and nondenominational manner. *Religions*, 1(1), 3-8. <https://doi.org/10.3390/re11010003>
- Poth, C. N., Creswell, J. W. (2016). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. United States: SAGE Publications.
- Preciado, A., & D'Anna-Hernandez, K. (2017). Acculturative stress is associated with trajectory of anxiety symptoms during pregnancy in Mexican-American women. *Journal of Anxiety Disorders*, 48, 28–35. <https://doi.org/10.1016/j.janxdis.2016.10.005>
- Qualtrics. (2019). ESOMAR 28: 28 questions to help buyers of online samples [Brochure].
- Qiu, C., Williams, M. A., Aurora, S. K., Peterlin, B. L., Gelaye, B., Frederick, I. O., & Enquobahrie, D. A. (2013). Agreement of self-reported physician diagnosis of migraine with international classification of headache disorders-II migraine diagnostic criteria in a cross-sectional study of pregnant women. *BMC Women's Health*, 13(50), 1-8. <https://doi.org/10.1186/1472-6874-13-50>
- Ramos, I. F., Guardino, C. M., Mansolf, M., Glynn, L. M., Sandman, C. A., Hobel, C. J., & Dunkel Schetter, C. (2019). Pregnancy anxiety predicts shorter gestation in Latina and non-Latina white women: The role of placental corticotrophin-releasing hormone. *Psychoneuroendocrinology*, 99, 166–173. <https://doi.org/10.1016/j.psyneuen.2018.09.008>
- Raphael-Leff, J. (1995). *Pregnancy: The inside story*. United Kingdom: J. Aronson.
- Rebolledo T., & Márquez, M. (2000). *Women's tales from the New Mexico WPA: La Diabla a Pie*. Houston, TX: Arte Público Press
- Reck, C., Hunt, A., Fuchs, T., Weiss, R., Noon, A., Moehler, E., Downing, G., Tronick E. Z., &

- Mundt, C. (2004). Interactive regulation of affect in postpartum depressed mothers and their infants: An overview. *Psychopathology*, 37(6), 265-280.
<https://doi.org/10.1159/000081983>
- Ren, S-Y., Gao, R-D., & Chen, Y-L. (2020). Fear can be more harmful than the severe acute respiratory syndrome coronavirus 2 in controlling the corona virus disease 2019 epidemic. *World Journal of Clinical Cases*, 8(4), 652 – 657. <http://doi: 10.12998/wjcc.v8.i4.652>
- Revenson, T. A. (1990). All other things are not equal: An ecological approach to personality and disease. In H. S. Friedman (Ed.), *Wiley Series on health psychology/behavioral medicine. Personality and disease* (p. 65-94). John Wiley & Sons.
- Rini, C. K., Dunkel-Schetter, C., Wadhwa, P. D., & Sandman, C. A. (1999). Psychological adaptation and birth outcomes: The role of personal resources, stress, and sociocultural context in pregnancy. *Health Psychology*, 18(4), 333–345. <https://doi.org/10.1037/0278-6133.18.4.333>
- Ross, L. E., Sellers, E. M., Gilbert Evans, S. E., & Romach, M. K. (2004). Mood changes during pregnancy and the postpartum period: Development of a biopsychosocial model. *Acta Psychiatrica Scandinavica*, 109(6), 457–466. <https://doi.org/10.1111/j.1600-0047.2004.00296.x>
- Rouhe, H., Salmela-Aro, K., Halmesmäki, E., & Saisto, T. (2009). Fear of childbirth according to parity, gestational age, and obstetric history. *British Journal of Obstetrics and Gynaecology: An International Journal of Obstetrics and Gynaecology*, 116(1), 67–73.
<https://doi.org/10.1111/j.1471-0528.2008.02002.x>
- Ruiz, R., J., Stowe, R. P., Brown, A., & Wommack, J. (2012). Acculturation and biobehavioral

- profiles in pregnant women of Hispanic origin: Generational differences. *Advances in Nursing Science*, 35(3), E1–E10. <https://doi:10.1097/ANS.0b013e3182626199>;
10.1097/ANS.0b013e3182626199
- Santiago-Rivera, A. L., Arredondo, P. M., & Gallardo-Cooper, M. (2002). *Counseling Latinos and la familial: A practical guide*. Thousand Oaks, CA: Sage Publications.
- Schlaudecker, E. P., Munoz, F. M., Bardají, A., Boghossian, N. S., Khalil, A., Mousa, H., Nesin, M., Nisar, M. I., Pool, V., Spiegel, H., Tapia, M. D., Kochhar, S., Black, S., & Brighton Collaboration Small for Gestational Age Working Group. (2017). Small for gestational age: Case definition & guidelines for data collection, analysis, and presentation of maternal immunisation safety data. *Vaccine*, 35(48 Pt A), 6518–6528.
<https://doi.org/10.1016/j.vaccine.2017.01.040>
- Seth, S. G., Goka, T., Harbison, A., Hollier, L., Peterson, S., Ramondetta, L., & Noblin, S. J. (2011). Exploring the role of religiosity and spirituality in amniocentesis decision-making among Latinas. *Journal of Genetic Counseling*, 20(6), 660-673. <https://doi:10.1007/s10897-011-9378-5>
- Sharma, D., Farahbakhsh, N., Shastri, S., & Sharma, P. (2016). Intrauterine growth restriction – part 2. *Journal of Maternal-Fetal & Neonatal Medicine*, 29(24), 4037-4048.
<https://doi.org/10.3109/14767058.2016.1154525>
- Sharma, D., Shastri, S., Farahbakhsh, N., & Sharma, P. (2016). Intrauterine growth restriction—part 1. *Journal of Maternal-Fetal & Neonatal Medicine*, 29(24), 3977-3987. <https://doi:10.3109/14767058.2016.1152249>
- Sharma, D., Shastri, S., & Sharma, P. (2016). Intrauterine growth restriction: Antenatal and postnatal aspects. *Clinical Medicine Insights. Pediatrics*, 10, 67–83.

<https://doi.org/10.4137/CMPed.S40070>

Slade, T., Johnston, A., Oakley Browne, M. A., Andrews, G., Whiteford, H. (2007) National Survey of Mental Health and Wellbeing: Methods and Key Findings. *Australian & New Zealand Journal of Psychiatry*. 2009(43), 7. 594-605.

<https://doi:10.1080/00048670902970882>

St. Laurent, J., De Wals, P., Moutquin, J-M., Niyonsenga, T. & Czernis, L. (2008).

Biopsychosocial determinants of pregnancy length and fetal growth. *Paediatric and Perinatal Epidemiology*, 22(3), 240-248. [https://doi.org/10.1111/j.1365-](https://doi.org/10.1111/j.1365-3016.2008.00926.x)

[3016.2008.00926.x](https://doi.org/10.1111/j.1365-3016.2008.00926.x)

Staneva, A. A., Bogossian, F., Pritchard, M., & Wittkowski, A. (2015). The effects of maternal depression, anxiety, and perceived stress during pregnancy on preterm birth: A systematic review. *Women and Birth*. 28(3), 179-193.

<https://doi.org/10.1016/j.wombi.2015.02.003>

Staneva, A. A., Bogossian, F., & Wittkowski, A. (2015). The experience of psychological distress, depression, and anxiety during pregnancy: A meta-synthesis of qualitative research. *Midwifery*, (6), 563-573. <https://doi.org/10.1016/j.midw.2015.03.015>

Stevens, E. P., & Pescatello, A. (1973). *Marianismo: The other face of machismo in Latin America*. Pittsburgh, PA: University of Pittsburgh Press.

Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). Mahwah, NJ: Routledge Academic.

Sundler, A. J., Lindberg, E., Nilsson, C., and Palmér, L. (2019). Qualitative thematic analysis based on descriptive phenomenology. *Nursing Open*, 6. 733– 739.

<https://doi.org/10.1002/nop2.275>

- Swamy, G. K., Ostbye, T., & Skjaerven, R. (2008). Association of preterm birth with long-term survival, reproduction, and next-generation preterm birth. *Journal of the American Medical Association*, 299(12), 1429-1436. <https://doi.org/10.1001/jama.299.12.1429>
- Szapocznik, J., & Kurtines, W. M. (1993). Family psychology and cultural diversity: Opportunities for theory, research, and application. *American Psychologist*, 48(4), 400—407. <https://psycnet.apa.org/doi/10.1037/0003-066X.48.4.400>
- Taylor, S. E., Repetti, R. L., & Seeman, T. E. (1997). Health psychology: What is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology*, 48, 411-447. <http://www.annualreviews.org/loi/psych>
- Teixeira, C., Figueiredo, B., Conde, A., Pacheco, A., & Costa, R. (2009). Anxiety and depression during pregnancy in women and men. *Journal of Affective Disorders*, 119(1–3), 142–148. <https://doi.org/10.1016/j.jad.2009.03.005>
- Teixeria, J.M., Fisk, N.M., & Glover, V. (1999). Association between maternal anxiety in pregnancy and increased uterine artery resistance index: Cohort based study. *British Medical Journal*, 318(7177), 153–157. <https://doi:10.1136/bmj.318.7177.153>
- Thapa, S. B., Mainali, A., Schwank, S. E., & Acharya, G. (2020). Maternal mental health in the time of the COVID-19 pandemic. *Acta Obstetricia Gynecologica Scandinavica*, 99(7), 817 – 818. <https://doi.org/10.1111/aogs.13894>
- Tomfohr-Madsen, L. M., Bayrampour, H., & Tough, S. (2016). Maternal history of childhood abuse and risk of asthma and allergy in 2-year-old children. *Psychosomatic Medicine: Journal of Biobehavioral Medicine*, 78(9), 1031–1042. <https://doi:10.1097/PSY.0000000000000419>
- Tuite, A. R., Bogoch I. I., Sherbo, R., Watts, A., Fisman, D., & Khan, K. (2020). Estimation of

- coronavirus disease 2019 (COVID-19) burden and potential for international dissemination of infection from Iran. *Annals of Internal Medicine*, 172(10), 699–701.
<https://doi.org/10.7326/M20-0696>
- Umaña-Taylor, A. J., & Updegraff, K. A. (2007). Latino adolescents' mental health: Exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms. *Journal of Adolescence*, 30(4), 549–567.
<https://doi.org/10.1016/j.adolescence.2006.08.002>
- United States Census Bureau. The Hispanic population 2010, 2010 census briefs. May. 2011
Retrieved from <https://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf>
- United States Census Bureau, Population Division. Monthly population estimates by age, sex, race and Hispanic origin for the United States. April 1. July 1. 2013 2010 2012.
<https://www.census.gov/popest/data/national/asrh/2012/2012-nat-detail.html>
- United States Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2014*. Rockville, Maryland: United States. Department of Health and Human Services, 2015. <https://mchb.hrsa.gov/chusa14/health-status-behaviors/infants/preterm-birth-low-birth-weight.html>.
- van Batenburg-Eddes, T., De Groot, L., Huizink, A. C., Steegers, E. A. P., Hofman, A., Jaddoe, V. W. V., Verhulst, F. C., & Tiemeier, H. (2009). Maternal symptoms of anxiety during pregnancy affect infant neuromotor development: The generation R study. *Developmental Neuropsychology*, 34(4), 476–493.
<https://doi.org/10.1080/87565640902964508>
- Van Manen, M. (2016). *Phenomenology of Practice: Meaning-Giving Methods in Phenomenological Research and Writing*. United Kingdom: Taylor & Francis.

- Vedam, S., Stoll, K., Martin, K., Rubashkin, N., Partridge, S., Thordarson, D. Jolicouer, G. & the Changing Childbirth in BC Steering Council. (2017). The mother's autonomy in decision making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care. *Plos One* 12(2), e0171804. <https://doi:10.1371/journal.pone.0171804>
- Wadhwa, P. D., Sandman, C. A., Porto, M., Dunkel-Schetter, C., & Garite, T. J. (1993). The association between prenatal stress and infant birth weight and gestational age at birth: A prospective investigation. *American Journal of Obstetrics and Gynecology*, 169(4), 858–865. [https://doi.org/10.1016/0002-9378\(93\)90016-C](https://doi.org/10.1016/0002-9378(93)90016-C)
- Warnock, F. F., Craig, K. D., Bakeman, R., Castral, T., & Mirlashari, J. (2016). The relationship of prenatal maternal depression or anxiety to maternal caregiving behavior and infant behavior self-regulation during infant heel lance: An ethological time-based study of behavior. *BMC Pregnancy and Childbirth*, 16, 264. <https://doi: 10.1186/s12884-016-1050-5>
- Wasserman, M., Bender, D., & Lee, S.-Y. D. (2007). Use of preventive maternal and child health services by Latina women: A review of published intervention studies. *Medical Care Research and Review*, 64(1), 4–45. <https://doi.org/10.1177/1077558706296238>
- Wenzel, A., & Stuart, S. (Collaborator). (2011). Anxiety in childbearing women: Diagnosis and treatment. American Psychological Association. <https://doi.org/10.1037/12302-000>
- Wilson-Costello, D., Friedman, H., Minich, N., Fanaroff, A. A., & Hack, M. (2005). Improved survival rates with increased neurodevelopmental disability for extremely low birth weight infants in the 1990s. *Pediatrics*, 115(4), 997–1003. <https://doi.org/10.1542/peds.2004-0221>

- World Health Organization. (1995). *Physical status: The use and interpretation of anthropometry*. Geneva, Switzerland: Author.
- World Health Organization. (1995). *Physical status: the use and interpretation of anthropometry*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5710996/>
- World Health Organization. (2002). *Towards a common language for functioning, disability and health – ICF*. Retrieved from <http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf>
- World Health Organization. (2004). *International statistical classification of diseases and related health problems, tenth revision, 2nd ed.* Retrieved from <https://apps.who.int/iris/handle/10665/42980>
- Zach, E. S., Kennedy, J., & Long, J. S. (2019). Can nonprobability samples be used for social science research? A cautionary tale. *Survey Research Methods, 13*(2), 215-227. <https://doi.org/10.18148/srm/2019.v13i2.7262>
- Zaigham, M., & Andersson, O. (2020). Maternal and perinatal outcomes with COVID-19: A systematic review of 108 pregnancies. *Acta Obstetrica et Gynecologica Scandinavica, 99*(7), 823 – 829. <https://doi.org/10.1111/aogs.13867>
- Zambrana, R. E., Scrimshaw, S. C. M., Collins, N., & Dunkel-Schetter, C. (1997). Prenatal health behaviors and psychosocial risk factors in pregnant women of Mexican origin: The role of acculturation. *American Journal of Public Health, 87*(6), 1022–1026. <https://doi.org/10.2105/AJPH.87.6.1022>

Appendix A

Internal Review Board for the Protection of Human Subjects (IRBPHS) Approval Notification

Attachments:

- Expedited Review Approved by Chair - IRB ID: 1456.pdf



IRBPHS - Approval Notification

To: Jennifer Zanolì
From: Richard Greggory Johnson III, IRB Chair
Subject: Protocol #1456
Date: 09/21/2020

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) has reviewed your request for human subjects approval regarding your study.

Your research (IRB Protocol #1456) with the project title **A study examining the effects of acculturation, marianismo, and religiosity on pregnancy related anxiety in Latina women. Additionally, this study will consider the association between pregnancy related anxiety and a pregnant woman's relationship with her primary health care provider as well as number of pregnancies.** has been approved by the IRB Chair under the rules for expedited review on **09/21/2020**.

Any modifications, adverse reactions or complications must be reported using a modification application to the IRBPHS within ten (10) working days.

If you have any questions, please contact the IRBPHS via email at IRBPHS@usfca.edu. Please include the Protocol number assigned to your application in your correspondence.

On behalf of the IRBPHS committee, I wish you much success in your research.

Sincerely,

Dr. Richard Greggory Johnson III
Professor & Chair, Institutional Review Board for the Protection of Human Subjects
University of San Francisco
irbphs@usfca.edu
[IRBPHS Website](#)

Appendix B

Eligibility Questionnaire – English Language

How old are you?

- 18-24
- 25-34
- 35-49
- 49+

Are you currently pregnant?

- Yes
- No

How many weeks pregnant are you?

- 8-12 weeks
- 13-24 weeks
- 25-38+ weeks

Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No

What is your race/ethnicity?

- White/Caucasian
- Black/African American
- American Indian/Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Other race: _____
- Prefer not to answer

At any time, have you been diagnosed with one or more of the following mental health disorders?

- no, none of these apply
- substance use
- schizophrenia
- personality disorder
- bipolar disorder

Eligibility Questionnaire – Spanish Language

¿Cuántos años tiene?

- 18-24
- 25-34
- 35-48
- 49+

¿Está actualmente embarazada?

- Sí
- No

¿Cuántas semanas de embarazo tiene?

- 8-12 semanas
- 13-24 semanas
- 25-38+ semanas

¿Es usted de origen hispano, latino o español?

- Sí
- No

¿A qué raza/etnia pertenece?

- Blanco/Caucásico
- Persona de color/Afroamericano
- Indio-americano/Nativo de Alaska
- Asiático
- Nativo de Hawái u otra isla del Pacífico
- Otra raza: _____
- Prefiero no contestar

En algún momento, ¿le han diagnosticado uno o más de los siguientes trastornos de salud mental?

- no, ninguno de estos aplica
- al uso de sustancias
- esquizofrenia
- un trastorno de personalidad
- trastorno bipolar

Appendix C

Demographic Questionnaire – English Language

This is my _____ pregnancy.

- 2
- 3
- 4
- 5
- 6 or more

Who do you seek for your pregnancy and birth care?

- Midwife
- Certified nurse midwife (CNM)
- Certified professional midwife (CPM)
- Certified midwife (CM)
- Obstetrician
- Family physician (FP)
- Other health care provider _____

What is your relationship status?

- Single, never married
- Married or domestic partnership
- Widowed
- Divorced
- Separated

What is your present religion, if any?

- Born-again Protestant
- Evangelical Protestant
- Roman Catholic
- Christian
- Orthodox Christian
- Other religion. Please specify _____
- None, I don't have a religion
- Atheist

What is the highest level of education you have completed?

- 12th grade or less
- High School Graduate or GED
- Some college/AA degree/Technical school training
- College graduate (BA or BS)
- Professional Degree
- Graduate school degree: Master's or Doctorate degree (MD, PhD, JD)

What is your household income?

- Less than \$5,000
- \$5,000 - \$19,999
- \$20,000 - \$49,999
- \$50,000 - \$99,999
- \$100,000 - \$149,999
- More than \$150,000
- Don't know
- Chose not to answer

Demographic Questionnaire – Spanish Language

Este es mi _____ embarazo.

- 2
- 3
- 4
- 5
- 6 o más

¿Cuál es su estado civil?

- Soltero, nunca se ha casado
- Casado o pareja de hecho
- Viudo
- Divorciado
- Separados

¿Cuál es su religión actual, si aplica?

- Protestante nacido de nuevo
- Evangélico Protestante
- Católico Romano
- Cristiano
- Cristiano Ortodoxo
- Otra religión. Por favor, especifique _____
- Ninguno, no tengo una religión
- Ateo

¿Cuál es el nivel de educación más alto que ha completado?

- 12o grado o menos
- Graduado de la escuela secundaria o GED
- Algún título universitario o de la AA o de la escuela técnica
- Graduado universitario (BA o BS)

- Título profesional
- Título de la escuela de posgrado: Maestría o Doctorado (MD, PhD, JD)

¿Cuál es su ingreso familiar?

- Menos de \$5.000
- \$5.000 - \$19.999
- \$20.000 - \$49.999

- \$50.000 - \$99.999
- \$100.000 - \$149.999
- Más de \$150.000
- No sé
- Prefiero no contestar

Appendix D

Coronavirus disease 2019 (COVID-19) Semi-Structured Interview Question – English and
Spanish Language

Masjoudi, Aslani, Khazaeian, & Fathnezhad-Kazemi (2020)

What were your experiences and feelings about prenatal care during the covid-19 pandemic?

¿Cuáles fueron sus experiencias y sentimientos acerca del cuidado prenatal durante la pandemia de COVID-19?