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2013-01-01

Stress Appraisal, Coping Response, and Acculturation Level as Predictors of Postpartum Depression Symptoms in Women of Mexican Origin

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STRESS APPRAISAL, COPING RESPONSE, AND ACCULTURATION LEVEL AS PREDICTORS OF POSTPARTUM DEPRESSION SYMPTOMS IN WOMEN OF MEXICAN ORIGIN

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Dedication

To my husband, Dr. José Luis González-Sánchez, words cannot express my gratitude for your

steadfast support of my academic pursuit and for your patience while I completed this process.

Most of all, thank you for your love, encouragement, and all the commutes you made between

Albuquerque and El Paso while I completed my doctoral studies. I know our living arrangements

required an enormous sacrifice on your part. I am eternally grateful for your selflessness.

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DISSERTATION

Presented to the Faculty of the Graduate School of

The University of Texas at El Paso

in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

Interdisciplinary Health Sciences Doctoral Program

THE UNIVERSITY OF TEXAS AT EL PASO

August 2013

Acknowledgements

Abstract

Transition into motherhood may be a time of mixed emotion. Though most women embrace motherhood and are optimistic about the role, approximately 13% of all women who give birth suffer from postpartum depression (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996). However, some studies report women of Mexican origin suffer postpartum depression symptoms at much higher rates than other racial and ethnic groups (Diaz, Huynh-Nhu, Cooper, & Munoz, 2007). Understanding how and to what extent postpartum depression symptoms affect mothers of Mexican origin remains incomplete. This 10 month prospective, repeated measures, proxy pretest study of pregnant and postpartum women of Mexican origin used Lazarus and Folkman's Transactional Model of Stress and Coping (Glanz & Schwartz, 2008; Lazarus, 1999; Lazarus & Folkman, 1984) as the theoretic and conceptual guide to explore how self-reported prenatal depressive symptoms, pregnancy related stress, general stress, coping strategies, and acculturation level impacted self-report depressive symptoms at three to seven weeks postpartum. One hundred and thirty five (135) pregnant women of Mexican origin enrolled in the study with 129 completing all phases. Overall, the study found that over half of participants screened normal for postpartum adjustment, while 43.4% experienced postpartum depressive symptoms; of those, 12.4% screened positive for DSM-IV "probable postpartum depression." Neither perceived stress nor coping strategy significantly predicted postpartum depressive symptoms. However, depressive symptoms during pregnancy significantly predicted depressive symptoms during postpartum and lower acculturation level moderated postpartum depressive symptoms. The final comprehensive stress and coping model suggested support for Lazarus and Folkman's model, and accounted for 43% of variance in reported postpartum depressive symptoms when examining Time 2 stress and coping strategies, and controlling for all Time 1 variables.

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Chapter 1: Introduction

The postpartum period represents a complex period in a woman's life where biological, psychological, and socio-cultural changes occur simultaneously (Grigoriadis & Romans, 2004). Postpartum depression is a non-psychotic depressive episode affecting approximately 13% of all women who give birth (O'Hara & Swain, 1996). This rate is slightly higher than the estimated 10% prevalence rate for major depression episode in non-pregnant Mexican American women (Karno et al., 1987.), double the 12 month prevalence estimate of 6.7% for major depressive disorder in the U.S. adult population (Kessler, Chiu, Demler, & Walter, 2005) and slightly less than the estimated 17% lifetime prevalence for major depressive disorder reported for U.S. adult population (Kessler, et al., 2005). Biological and social risk factors associated with developing postpartum depressive symptoms are prenatal depressive symptoms, psychological distress and stressful life events (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996), and demographic characteristics such as ethnic minority, and lower financial, educational and employment status (Diaz, Huynh-Nhu, Cooper, & Munoz, 2007). If left undiagnosed and untreated postpartum depressive symptoms may negatively impact a woman's ability to perform activities of daily living, her ability to bond with her infant, and negatively affect her personal relationships (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996). While predictors of postpartum depression and how postpartum depressive symptoms impact non-Hispanic White women are extensively reported, there exists in dearth in the literature about how self-reported postpartum depressive symptoms affect women of Mexican origin. Thus, this study explored how demographic factors, self-reported prenatal depressive symptoms, pregnancy related stress appraisals, coping strategies and level of acculturation impacted self-reported postpartum

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depressive symptoms three to seven weeks postpartum in women of Mexican origin living on the United States Mexico border.

Specific Study Aims

Research suggests that for low income Hispanic women depressive symptoms associated with parturition are highest in pregnancy and decrease linearly over the postpartum period (Diaz, Huynh-Nhu, et al. 2007).   Although stressful life events and distress during pregnancy are positively associated with more postpartum depressive symptoms (Beck, C.T., 2001; Beck, C.T., 1996; Honey, Morgan & Bennett, 2003; O'Hara & Swain, 1996), the affects of pregnancy related stress on postpartum depressive symptoms is rarely explored in woman and not reported for women of Mexican origin. A study exploring stress and coping in first time British mothers reported more negative appraisals of parenthood as stressful and threatening placed women at greater risk for postpartum depressive symptoms compared to women with more positive parenthood appraisals (Honey et al. 2003). While this study did not include women of Mexican origin, study findings lend support for exploring stress and coping in pregnant and postpartum women of Mexican origin. Persons of Mexican origin many live in disadvantaged circumstances which make them prone to chronic exposure to life stress resulting from economical, educational, environmental and health disparities (Farley, Galves, Dickinson, de Jesus Diaz Perez, 2005). Additionally, research findings for how acculturation level impacts postpartum depressive symptoms in Hispanics are equivocal (Beck, C.T., Froman, & Bernal, 2005; Martinez-Schallmoser, Telleen, MacMullen, 2003). Therefore, the overall purpose of this study was to determine how self-reported prenatal depressive symptoms, appraisals of pregnancy related stress and general stress, coping strategies, and acculturation level affected depressive symptoms three to seven week postpartum in women of Mexican origin. The principal

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hypothesis of this study was that prenatal depressive symptoms, pregnancy related stress, general stress, coping strategies and acculturation would impact self-reported Postpartum Depression Screening Scale (PDSS) scores; a measure of postpartum depressive symptoms (Beck, C.T., & Gable, 2000; Beck, C.T. & Gables, 2001a; Beck, C.T. & Gables, 2001b). Thus, the specific aims of this study were:

Aim 1: To determine the extent self-reported depressive symptoms and pregnancy stress appraisals during the third-trimester of pregnancy predicted severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum.

Hypothesis 1: Higher prenatal depression scores (Beck Depression Inventory II) and higher pregnancy related stress scores (Pregnancy Related Stress Inventory) during the third trimester of pregnancy would predict higher Postpartum Depression Screening Scale (PDSS) scores (more depressive symptoms) at three to seven weeks postpartum.

Aim 2: To determine the extent third trimester coping strategies to pregnancy related stress predicted self-reported postpartum depressive symptoms at three to seven weeks postpartum in study participants.

Hypothesis 2: Use of approach coping strategies (i.e., planning, positive reframing) on the Brief COPE would be associated with lower PDSS scores (fewer depressive symptoms) while avoidance coping strategies (i.e., denial) would be associated with higher PDSS scores (more depressive symptoms) at three to seven weeks postpartum in study participants.

Aim 3: To determine the moderating effect of acculturation level on the association of self-reported pregnancy related stress scores at the third trimester of pregnancy on postpartum depressive symptoms at three to seven weeks postpartum.

Hypothesis 3: Lower scores on the Acculturation Rating Scale for Mexican Americans II (lower acculturation level) would significantly weaken the association between perceived pregnancy related stress and postpartum depressive symptoms at three to seven weeks postpartum.

Understanding how stress and coping during pregnancy affects postpartum depressive symptoms at three to seven weeks postpartum in women of Mexican origin is important because unidentified depressive symptoms may have clinical implications with potentially incapacitating effects on those who may already suffer from chronic exposure to life stressors (Farley et al. 2005).

Chapter 2: Literature Review

2.1 OVERVIEW OF POSTPARTUM DEPRESSIVE SYMPTOMS AND PREDICTORS

The postpartum period represents a complex period in a woman's life where biological, psychological and socio-cultural changes occur simultaneously (Grigoriadis & Romans, 2004). Postpartum depression is a non-psychotic depressive episode whose etiology is unknown and whose onset and duration vary (Gavin, et al. 2005; Heilemann, Coffey-Love, Frutos, 2004; O'Hara & Swain, 1996). Postpartum depressive symptoms are not dissimilar from depressive symptoms experienced at other times in life. Therefore, the term postpartum qualifies when the depressive symptoms occur (APA, 2000) rather than implying depression associated with childbirth is a distinct disorder with a unique constellation of symptoms. Symptoms associated with postpartum depression includes loss of interest in pleasurable activities, sleep and appetite disturbances, feelings of worthlessness, the inability to concentrate, loss of energy and suicidal thoughts (APA, 2000; Beck, C.T., 2001; Beck, C.T., 1996; Gavin, et al. 2005; Grigoriadis & Romans, 2006, O'Hara & Swain, 1996). Unlike other periods in life when depressive symptoms may occur, depressive symptoms associated with childbirth must be differentiated from symptoms paralleling the "normal experience" of caring for a neonate which includes maternal sleep disturbances and loss of energy and from postpartum blues (Beck, C.T., 2001; Beck, C.T., 1996; Gavin, et al. 2005; O'Hara & Swain, 1996). Postpartum blues symptoms are analogous to postpartum depressive symptoms and considered a normal occurrence of parturition. A critical difference between postpartum blues symptoms and postpartum depressive symptoms is postpartum blues symptoms spontaneously resolve by the tenth postpartum day without sequelae to the mother or infant (Beck, C.T., 2001; Beck, C.T., 1996; Grigoriadis & Romans, 2006; O'Hara & Swain, 1996). Thus, when researching postpartum depression it is important to take

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into account timing of depressive symptoms assessment (O'Hara & Swain, 1996). Onset of postpartum depressive symptoms generally begins within four weeks of delivery with most depression episodes resolving within three months (Grigoriadis & Romans, 2006). Some evidence suggests the second and third postpartum months have the highest depressive symptoms prevalence (Gavin et al. 2005) while other evidence shows depression episodes may last up to one year after delivery (O'Hara & Swain, 1996). This variation in symptom onset and duration makes it difficult to empirically know when it is best to screen for and identify postpartum depressive symptoms. Researchers often measure symptoms at the sixth postpartum week (Beck, C.T. & Gables, 2000; Honey et al. 2003) though this interval may reflect more on how postpartum care is delivered rather than empirical evidence suggesting the zenith of depressive symptoms occurs on or about the sixth postpartum week.

Substantial research findings are available related to predictors of postpartum depressive symptomatology (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996). According to the seminal meta-analysis of postpartum depression predictors (O'Hara & Swain, 1996), the strongest predictors of postpartum depression were a past history of psychopathology and psychological distress during pregnancy, poor marital relationship, low social support and stressful life events. Two subsequent meta-analyses (Beck, C.T., 2001; Beck, C.T., 1996) corroborate earlier findings and add child care stress, life stress, prenatal anxiety, self-esteem, infant temperament, socioeconomic status and unplanned/unwanted pregnancy as other predictors of postpartum depression.

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2.2 POSTPARTUM DEPRESSIVE SYMPTOMS AND PREDICTORS IN WOMEN OF MEXICAN ORIGIN

Prevalence, predictors and consequences of postpartum depression are widely reported for non-Hispanic White women (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996) with less being reported about how postpartum depressive symptoms affect women of Mexican origin (Diaz, et al. 2007; Heilemann, Coffey-Love, Frutos, 2004). This paucity is of concern because persons of Mexican origin make up the largest subgroup within the Hispanic category and are expected to be the largest ethnic minority group in the United States by 2050 (Bureau of the Census P25-1130, March 21, 2008). Plus, persons of Mexican origin may live with chronic exposure to life stress resulting from economical, educational, environmental and health disparities that may place them at greater risk for psychiatric disorders (Farley et al. 2005).

When risk and protective factors for developing postpartum depression symptoms are explored in studies including Hispanic women, prior history of prenatal depression, low social support, low self efficacy and life stress consistently predict higher levels of postpartum depression symptoms even after controlling for demographic and socioeconomic factors (Gavin et al. 2005; Heilemann et al. 2004; Howell, Mora, Leventhal, 2006; Howell, Mora, Horowitz, Leventhal, 2005). In a telephone study comparing postpartum depressive symptoms among white, African American and Hispanic adult women (n= 655) between two and six weeks postpartum, approximately 50% of Hispanic women reported depression symptoms (Howell, et al. 2005). Symptoms were highly correlated to being less than 25 years old, having low social support and less maternal efficacy (Howell et al. 2005). Though striking, this finding raises the question of confounding postpartum blues with post partum depression symptoms given the time interval for assessing symptoms. A prospective study of 3952 women drawn from three large US cities shows striking comparative results about how postpartum depressive symptoms experienced by women of Mexican origin compare to symptoms experienced by other ethnic

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Hispanic women two to three days post delivery (Kuo et al. 2004). Women of Mexican origin experience more symptoms even when controlling for demographic and economic factors (Kuo et al. 2004). Again caution must be used when interpreting this finding because of the potential confounding effect of postpartum blues (Beck, C.T., 2001, Beck, C.T., 1996; Grigoriadis & Romans, 2006; O' Hara & Swain, 1996). In order to minimize the possible confounding effect of postpartum blues symptoms which may have affected some studies (Howell et al. 2005; Kuo et al. 2004) screening for depressive symptoms should occur later rather than sooner in the postpartum period (O'Hara & Swain, 1996).

2.3 ROLE OF PRENATAL DEPRESSIVE SYMPTOMS AND PREGNANCY RELATED STRESS APPRAISALS ON POSTPARTUM DEPRESSIVE SYMPTOMS

The association of prenatal depression as a risk factor for postpartum depressive symptoms has long been established (Beck, C.T., 2001, Beck, C.T., 1996; O'Hara & Swain, 1996). However, within the last ten years this association has received renewed attention. This is perhaps due to reported prevalence of depressive symptoms during pregnancy being relatively high for the second and third trimesters and approaching the overall postpartum depression rate of 13% (Bennett, Einarson, Taddio, Koren, Einarson, 2004; O'Hara & Swain, 1996). Specifically, the prevalence of depressive symptoms during pregnancy was reported at 7.4%, 12.8% and 12.0% for each trimester, respectively in a systematic review of depression during pregnancy (Bennett et al. 2004). In a prospective study exploring the trajectory of perinatal depressive symptoms in 69 low income women of Mexican origin, researchers found a higher pattern of depressive symptoms during pregnancy than postpartum and a decreasing linear trend from baseline in depressive symptoms over a 12 month period for all mothers (Diaz et al. 2007). In another study, women of Mexican origin cited their susceptibility to depression related to partner issues and family issues (Heilemann et al. 2004). Issues cited specifically were parenting

insecurities about parenting skills, doubting one's ability to be a good mother and providing emotional and physical support their children needed so the child could have a better life. These findings suggest that depression screening associated with parturition begin during pregnancy in a proactive attempt to identify and treat women sooner and to consider other social factors that create stress during pregnancy.

The impact of life stress on postpartum depression has received considerable attention in the literature (Beck, C.T., 2001; Beck, C.T., 1996; O'Hara & Swain, 1996). Alternative views such as one that considers postpartum depressive symptoms may be situational and precipitated from circumstances linked to pregnancy related stress has received little attention in the literature for any group of women (Hawkins, DiPietro & Costigan, 1999; Honey et al. 2003; Levy-Schiff, Dimitrovsky, Shulmann & Har-Even, 1998) and none of the studies reported explored this phenomenon in women of Mexican origin.

When comparing perceived maternal stress of pregnancy among women of differing socioeconomic status, one study found that regardless of SES women had an uplifted perception of pregnancy (Hawkins et al. 1999). Specifically, African American women from a lower SES did not perceive pregnancy as a negative stressor and reported less daily stressors related to pregnancy than higher SES women (Hawkins et al. 1999). However, this study did not include women of Mexican origin and it did not investigate how pregnancy related stress appraisals were associated to postpartum depressive symptoms. A longitudinal study of first time Israeli women (n=140) explored cognitive stress appraisals and coping strategies at pregnancy, 1, 6 and 12 months postpartum as correlates of parenting adjustment (Levy-Schiff et al.1998). The findings showed systematic variation across all times with mothers' negative appraisals of parenting as stressful and threatening more evident in the immediate postpartum phase and positive appraisals

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of parenthood more apparent in the later postpartum period (Levy-Schiff et al. 1998). Though this study focused on parental stress, it did not examine its effect on postpartum depressive symptoms. In a sample of first time British mothers, more negative appraisals of parenthood as stressful and threatening placed women at greater risk for postpartum depressive symptoms compared to women with more positive appraisals both during pregnancy and six weeks post delivery (Honey et al. 2003). While the latter two studies were not conducted in the United States and did not include women of Mexican origin, they provide some evidence that motherhood may be more similar than dissimilar among women and that the association of pregnancy stress appraisals on postpartum depressive symptoms should be explored.

2.4 ROLE OF COPING STRATEGIES ON POSTPARTUM DEPRESSIVE SYMPTOMS

A stereotype exists that women of Mexican origin are surrounded and supported by a social network that constructively and satisfactorily tends to their needs after childbirth (Clark, 2001). However, qualitative research findings challenge this stereotype and suggest that while some women of Mexican origin have an extended support system, the social network may not be helpful to the woman or the woman may be dissatisfied with the support received (Clark, 2001). This finding calls into question what coping strategies women of Mexican origin use to ameliorate stressful situations when social support is perceived as dissatisfying. Overall, a literature dearth exists for understanding how coping strategies impact postpartum depressive symptoms, in general. Specifically, how a transactional model of stress and coping impacts mood in postpartum women of Mexican origin was not located in the literature. Several studies (Gotlib, Whiffen, Wallace & Mount, 1991; Honey et al. 2003; Levy-Schiff et al.1998; Rudnicki, Graham, Habboushe, & Ross, 2001) exploring the effects of select psychosocial factors to include stress appraisal and coping style on either prenatal or postpartum depressive symptoms were consistent

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in their findings. All reported that an avoidant coping style was associated with depressed mood. Among these studies only one (Rudnicki et al.2001) included a small proportion (6%) of Hispanic women. This dearth lends further support to why exploring the role of coping strategies and postpartum depression symptoms in women of Mexican origin is necessary.

2.5 ROLE OF ACCULTURATION LEVEL ON POSTPARTUM DEPRESSIVE SYMPTOMS

Acculturation has long been studied as a factor associated with mental health issues among Hispanics. Yet, the effect of acculturation on postpartum depressive symptoms in Hispanic women remains largely unexplored (Beck, C.T., 2006). The classical definition of acculturation put forth by Redfield, Linton and Herkovits in 1936 is "an adaptive process whereby persons or groups from differing cultures come into first-hand continuous contact resulting in cultural pattern changes in individuals, changes in a group or changes in both groups" (Berry, 1997). This definition suggests acculturation is a complex process that occurs on multiple levels. Therefore, it must be assumed that the adaptation process is highly dynamic, probably not linear and possibly context specific (Berry, 1997; Lechuga, 2008; Sam, 2006). However, when level of acculturation is explored in studies of postpartum depressive symptoms, it is often conceptualized as existing on a linear continuum where old and new culture create the endpoints with the primary domain explored being language use (Beck, C.T. et al. 2005) or measured by an acculturation proxy such as birth place or time in United States (Ngugen, Clark & Ruiz, 2007). These narrow conceptualizations of acculturation negate the complexity of the adaptation process but more troubling is that when these narrow conceptualizations are used in research the effect of acculturation on postpartum depression symptoms yields conflicting results (Beck, C.T. et al. 2005; Ngugen, et al. 2007).

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Beck, C.T. et al. (2005) in a study of acculturation level and postpartum depressive in Hispanic mothers (Puerto Rican, Mexican and others) found an inconsistent relationship between acculturation and postpartum depressive symptoms in a two phased study. When compared to other Hispanic ethnicities in the first phase sample (N=377), Mexican women (n=177) were the least likely to experience postpartum depressive symptoms. In phase two of this study which looked at depression diagnosis (N=150), ethnicity and acculturation level were not statistically significant. This study used the Short Acculturation Scale (SAS) which consists of questions that primarily tap language (Beck, C.T. et al. 2005). By contrast Martinez-Schallmoser, et al. (2003) found acculturation to be significantly associated with postpartum depressive symptoms in 66 multiparous women of Mexican origin living in the Midwest. These researchers used a modified scale of a validated acculturation scale that tapped language, ethnic identity, cultural heritage, and semantic descriptions of Mexican men and women. Findings from a study using language preference as a proxy measure for acculturation and its effect on depressive symptoms (CES-D scores) on item endorsement among Mexican women found those who preferred using Spanish were less likely to endorse somatic symptoms and more likely to endorse positive items (Ngugen, et al. 2007). Though interesting, a limitation of this study is the researchers determined "acculturation" based on language preference for responding to survey questions.

A need exists to explore the association of acculturation level on postpartum depressive symptoms for women of Mexican origin using an expanded conceptualization of the acculturation construct such as Berry's (1997) acculturation framework which considers acculturation to be dynamic and multidimensional. Given the dearth of research on the effects of acculturation on postpartum depressive symptoms in mothers of Mexican origin, acculturation level might be measured using the Acculturation Rating Scale for Mexican Americans-II

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(ARSMA-II) which has two cultural orientation subscales; Anglo and Mexican (Cuellar, Arnold & Maldonado, 1995). The ARSMA-II is constructed using Berry's framework and is described by its developers as "interactive, developmental, multifactorial, multidirectional and multidimensional process" (Cuellar et al. 1995, p. 279).

2.6 CONCEPTUAL FRAMEWORK

The theoretical basis for this study was Lazarus and Folkman's Transactional Model of Stress and Coping (Glanz & Schwartz, 2008; Lazarus, 1999; Lazarus & Folkman, 1984). Broadly, the model posits that the ensuing response (coping outcome) is predicated on the evaluation (appraisal) made about a stressor's meaning, relevance and significance and the resources (coping efforts) perceived to be available to ameliorate a threat to well being (Glanz & Schwartz, 2008; Lazarus, 1999; Lazarus & Folkman, 1984).

The foundational constructs of the Transactional Model of Stress and Coping are stress/stressor, cognitive appraisal, coping efforts and coping outcomes (Glanz & Schwartz, 2008; Lazarus, 1999; Lazarus & Folkman, 1984). This model depicts stress as a relational interaction between a person and the environment while a stressor is an internal or external demand with the potential to disrupt physical and psychological well being (Glanz & Schwartz, 2008; Lazarus, 1999; Lazarus & Folkman, 1984). Cognitive appraisal is two pronged; primary appraisal and secondary appraisal. Primary appraisal is the evaluation of meaning, relevance and significance of a stressor. This results in a decision about whether the stressor is (1) irrelevant; (2) relevant and positive or (3) relevant and negative. The third condition generates stressful appraisals which are further categorized into appraisals of (1) harm or loss, (2) threat when harm or loss is anticipated, (3) challenge with the potential for gain or growth (Glanz & Schwartz, 2008). In contrast, secondary appraisals are self-reflective assessments made about

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controllability and available resources to cope with a stressor. Primary and secondary appraisals converge resulting in an appraisal about a stressor's quality as threatening (negative) or challenging with potential for growth and mastery (positive). The outcome of this two-tiered appraisal process activates eight situation specific ways of coping efforts that may be problem-focused or emotion focused (Lazarus & Folkman, 1984).

Coping is a dynamic phenomenon based on "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). Coping is process-oriented, contextual and free of a priori assumptions (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Guren, 1986). Once the appraisal-coping cascade is activated, how a stressor is appraised changes constantly as a result of the appraisal-coping feedback mechanism. Being a process, all the components of the stress and coping model are interdependent; primary and secondary appraisals are interdependent as are coping and appraisal. This interdependence facilitates the bi-directional and reciprocal feedback loops of coping suggesting coping within the context of this model offers a situational versus a global assessment of coping style (Lazarus & Folkman, 1984).

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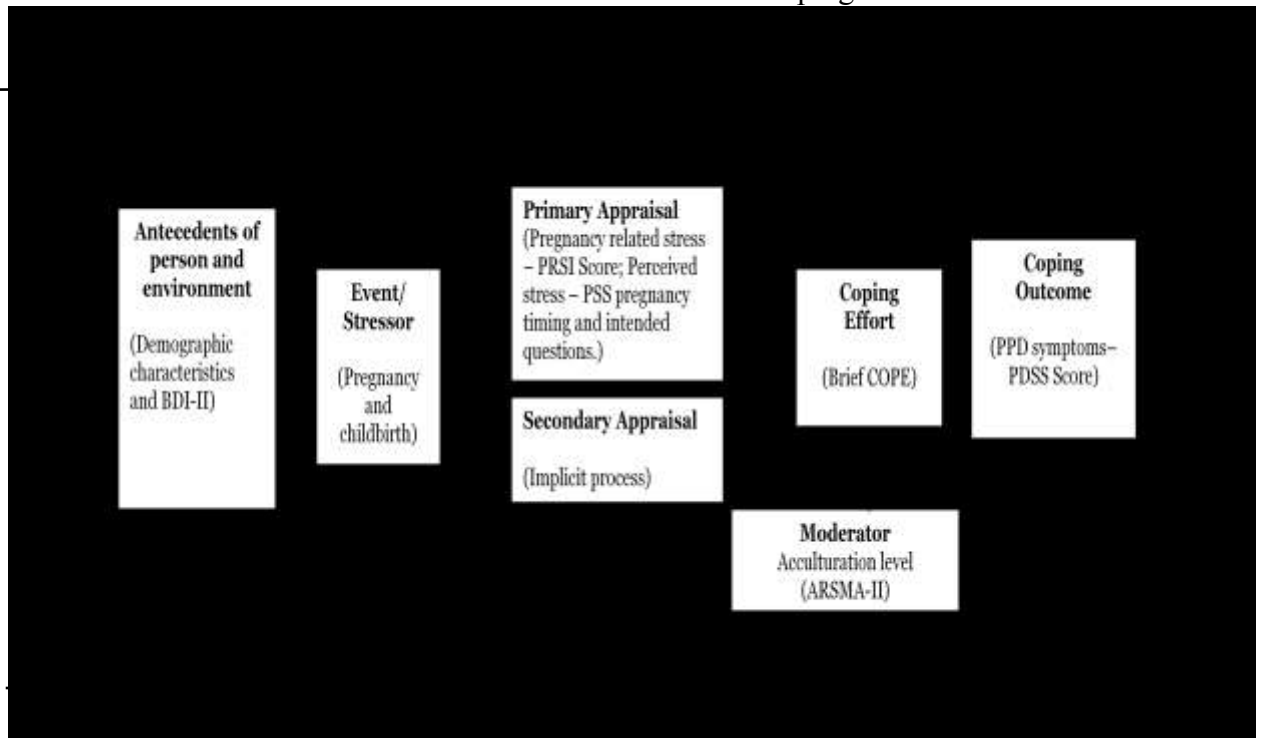
Figure 1.1 Lazarus and Folkman's Transactional Model of Stress and Coping

Notes: **Schematic adapted from Glanz**, et. al (2008) Stress, coping and Health behavior. In Glanz, K., Rimer, B.K., Viswanath, K. (Eds.), *Health Behavior and Health Education Theory, Research and Practice* 4th ed. (pg.216). **BDI-II**: Beck Depression Inventory II; Beck, A.T., Steer, R.A., and Brown, G.K. (1996). *BDI-II Manual* (2nd ed.), Pearson PsychCorp. San Antonio, TX. ; **PRSI**: Pregnancy Related Stress Inventory; Ruiz, J.R., Fullerton, J., Guerrero, L.C., Garcia-Atwater, M., Dolbier, C.L. (2006) Development of a culturally sensitive stress instrument for pregnant Hispanic women. *Hispanic Health Care International 4: 27-3.* **PSS**: Perceived Stress Scale Cohen, S.,Kamarck, T, & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health Care and Social Behavior,* 24 (4) 385-.396. ; **PDSS**: Postpartum Depression Screening Scale Beck, C.T. and Gable, R.K. (2000) Postpartum depression screening scale: Development and psychometric testing. *Nursing Research, 49:272-282*; **ARSMA-II**: Acculturation Rating Scale for Mexican Americans-II. Cuellar, I., Arnold, B., Maldonado, R. (1995). Acculturation Rating Scale for Mexican Americans-II: A revision of the original ARSMA Scale. *Hispanic Journal of Behavioral Sciences, 56: 272-304.*

Chapter 3: Design and Methods

3.1 RESEARCH SETTING

This was a 10-month prospective, repeated measures study exploring postpartum depressive symptoms in women of Mexican origin aged 18 to 40 years. During the course of their participation in the study, all participants (n=135) lived on the United States and Mexico border and received prenatal care in El Paso, Texas. Women participated asynchronously. The study began February 1, 2011 with the first Time 1 assessment and the last Time 2 assessment completed by November 30, 2011.

El Paso, Texas is an urban city of just under 670,000 inhabitants (US Census Quickfacts, 2012) located on the United States Mexico border adjacent to Ciudad Juárez, Chihuahua, México. According to the Census, 52% of El Paso's inhabitants are female; approximately 81% of the city's inhabitants are of Hispanic or Latino origin; 73.6 % of the inhabitants have a high school degree; the median household income is just under $37,500 per year; and 24.1% of residents live in poverty.

Participant recruitment occurred exclusively at a well established, two-physician private obstetrics and gynecology practice with two locations within the city limits. Both physicians were board certified obstetrician gynecologists and exclusively practiced general obstetrics and gynecology. This practice provided a favorable research setting because it served a high proportion of women of Mexican origin, had a high patient volume, generated approximately 420 deliveries annually (35 per month), and had consistent scheduling for prenatal and postpartum appointments at each office location. Such scheduling facilitated participant recruitment and follow up while minimizing office disruptions for research activities. Additionally, the physicians expressed enthusiasm for the project, giving the principal investigator (PI) access to both office locations for participant recruitment and follow up,

willingness to designate one medical assistant at each location to assist with identifying and referring potential study participants to the PI, and assisting with tracking postpartum appointments.

According to the physician owner of the practice (Dr. A. Soegaard-Torres, Personal Communication, January 2011), the women seeking care at these offices mirror the demographics of El Paso, Texas with more than 80% of the women seeking care being of Mexican origin. The practice has a varied socio-economic payer mix including a combination of self-pay (cash payers), private insurance, Tri-Care, Medicaid, and virtually no uninsured obstetrics patients.

3.2 SAMPLE SIZE

Data from two meta-analyses of postpartum depression predictors (O'Hara and Swain, 1996 and Beck, C.T., 2001) informed sample size for this study. Both studies found that each of the independent variables of interest for this study had medium to medium-large effect sizes, as defined by Cohen (1992), on postpartum depressive symptoms. A prospective study exploring the effect of psychosocial factors on postpartum mood, which included perceived stress and coping style found effect sizes for individual variables ranging from .36 to .46 (VanVoorhis & Blumentritt, 2007). Therefore, a medium effect size was used in combination with Cohen's guidance for calculating sample size when using multiple regression (Cohen, 1992). The sample size calculation assumed a power of 0.8, an alpha of 0.05 (two-tailed), R^2 of .06 and 11 predictor variables. Using GPower 3.1(Faul, Erdfelder, Lang, & Buchner, 2007), these assumptions yielded a calculated sample size of 123 for this study. The calculated sample size (n=123) was increased by 10% (i.e. 12 participants) to account for possible participant attrition. Therefore, the PI recruited 135 pregnant women of Mexican origin for this study.

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3.3 STUDY DESIGN

As described above, this was a 10-month prospective, repeated measures with a proxy pretest (Shadish, Cook and Campbell, 2002) study exploring perceived stress, coping strategies, and acculturation as predictors of postpartum depressive symptoms in women of Mexican origin aged 18 to 40 years. The study assessed most predictors twice during the 10-month period. The first assessment occurred in the third trimester of pregnancy (28 to 40 weeks gestation) and the second assessment occurred three to seven weeks postpartum. Study variables assessed only once included acculturation; a specific pregnancy related stress measure, both at Time 1 and self-reported postpartum depressive symptoms at Time 2. For repeated measures analyses, scores on a general depression measure served as the proxy pretest.

3.4 SAMPLING AND ELIGIBILITY ASSESSMENT

The study used convenience sampling. A designated office staff member at each office location assisted with participant recruitment. Designated staff identified potential study participants using PI developed study screening criteria (age, ethnicity, non-complicated third trimester pregnancy, no chronic disease, and no multiple gestations, e.g. twins, triplets). When the designated staff member identified a potential study participant on the schedule roster, she verified preliminary eligibility through medical record review, informed the woman about possibly being eligible for the study, and asked the woman if she wished to speak to the PI about the study. Staff only referred the women responding affirmatively to wanting more information about the study. All study recruitment and data collection occurred in conjunction with scheduled office appointments.

Inclusion Criteria

Participant inclusion criteria were: (a) nulliparous (no prior deliveries) and multiparous (prior deliveries) women in their third trimester of pregnancy (28 to 40 weeks gestation); (b) aged 18-40 years; (d) self-report of Mexican origin; (e) able to read and write in English or Spanish.

Exclusion Criteria

Participant exclusion criteria were: (a) women incapable of giving informed consent; (b) women who self-reported having diseases with the potential to induce a stress apart from pregnancy, delivery, and child care issue. These conditions included (1) chronic health conditions such as pre-gestational diabetes (having diabetes prior to pregnancy), asthma, hypertension, autoimmune disorders such as lupus, renal disease.; (2) confirmed HIV/AIDS; (3) confirmed neoplasm; (4) women currently being treated for any psychiatric condition (depression, anxiety, addictive disorders, etc.), and (c) women with a multiple gestation (carrying twins, triplets).

Office staff referred 137 women whom they thought met presumptive study eligibility. Of the 137 women referred, two were ineligible because of ethnicity. Both were Hispanic, but neither was of Mexican ethnicity. Of the 135 women determined to be study eligible, 100% enrolled in the study.

Study inclusion and exclusion criteria reduced the likelihood participants in the study would have physical disease or mental health conditions that could induce stress and coping efforts apart from events related to the pregnancy and delivery. Office staff confirmed absence of exclusionary criteria through medical record review before referring women for possible study enrollment. The PI verbally confirmed health status prior to study enrollment.

3.5 PROCEDURES

After obtaining approval from the Institutional Review Board (IRB) at the University of Texas at El Paso (UTEP) for this study and prior to any data collection, the PI met with practice personnel at each practice location to discuss the study's logistical details and study procedures. In accordance with UTEP IRB requirement, the practice owner provided written permission to the IRB for use of the practice and support for the research activities of this study.

The PI explained study purpose, procedures, measures, inclusion and exclusion criteria and answered questions about the study and the designated contact person's role for this study. Designated office staff did not collect or manage data for this study. The designated office staff member's role was limited to identifying and referring prospective study participants and helping track postpartum care follow up appointments. Office staff identified expectant women meeting basic study screening criteria from schedule rosters, confirmed presumptive eligibility through medical record review using study inclusion and exclusion criteria, and informed women of the study.

Designated office staff referred only women wanting more information about the study to the PI. Once a potential participant agreed to meet with the PI, designated office staff escorted the woman to the PI who was in a private office area where recruitment, enrollment and all data collection occurred at each location. The PI introduced herself to each woman in the woman's preferred language, either English or Spanish, and informed her that she may be eligible to participate in a study exploring postpartum depressive symptoms in women of Mexican origin. After verbally confirming the woman's interest in study participation, the PI explained the study in detail in the woman's preferred language. Each woman had the opportunity to ask questions about the study prior to proceeding with enrollment. The PI obtained written informed consent using an IRB approved consent form (Appendix A and B) in the woman's preferred language.

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For women agreeing to participate, the PI confirmed the participant's study eligibility, provided the participant a copy of the signed informed consent, and kept the original consent form.

Agreeing participants completed six self-report, paper and pencil questionnaires at Time 1 immediately following her medical visit. The PI presented and explained all study questionnaires to participants. Participants completed all study forms in a designated private space in the medical office. The PI reviewed each participant's forms for completion prior to the woman leaving the data collection area. The PI pointed out any unanswered question to the participant and asked if she wished to complete the questions or wished to leave the question unanswered. The PI placed completed questionnaires in a manila envelope, sealed the envelope in the presence of the participant, and informed each participant the second part of the study would occur with her postpartum follow up appointment. Each participant received a $20.00 gift card incentive, was thanked, and released. The PI was on site at both office locations for all research related activities, and available by telephone if office staff or study participants had any questions about the study.

Approximately six weeks after enrollment, Time 2 assessments took place in conjunction with participants' scheduled postpartum care follow up appointment. The PI kept a list of all participants' expected delivery date and weekly reviewed those dates with designated office staff at each medical office location. Designated office staff kept a list of her own with the names and expected delivery date of all the women referred to the PI. Using the two lists and an on-line patient schedule roster of upcoming appointments accessible only to office staff, the designated staff determined which participants had delivered and scheduled a postpartum appointment, and informed the PI of the participant's scheduled postpartum appointment date and time. The office staff did not know which women on her list of referred patients enrolled in the study until the

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corroboration of follow up appointments with the PI.

As with the Time 1 assessment, the PI presented and explained all study questionnaires to participants at Time 2. Participants completed four self-report measures in a private space in the medical office at the conclusion of her scheduled postpartum follow up appointment. Instructions and survey completion procedures were identical to those used during Time 1. Prior to releasing participants from the study, the PI oriented all participants to postpartum depressive symptoms and instructed each one to contact her obstetrician immediately if she had profound sadness that interfered with activities of daily living. If she developed suicidal thoughts and ideations or urges to harm herself, her infant, or others, or if she had profound sadness when her obstetrician's office was not open, she was to call the local mental health crisis hotline at (915) 779-1800 or 877-562-6467 immediately. All participants also received a list of community resources available for addressing postpartum depression symptoms (Appendix C)

The PI answered participants' questions about postpartum depressive symptoms and the resource list. The PI referred all other participant questions to the designated office staff before the participant left the medical office. At the conclusion of the session, the PI presented each participant with a $25.00 gift card incentive, thanked her for her participation, and released her from the study.

Designated office staff notified participants who failed to keep her scheduled postpartum follow up appointment in accordance with office missed appointment policy, rescheduled the participant's appointment, and notified the PI with the new appointment date and time. As more participants delivered, the PI and designated staff re-confirmed all previously scheduled postpartum appointments and identified the newly delivered participants and noted scheduled appointment dates and times. This confirmation process occurred weekly.

3.6 INSTRUMENTS

The six instruments used for this study all had demonstrated strong psychometric properties, were available in both English and Spanish language, and culturally appropriate for women of Mexican origin. The PI developed the demographic questionnaire used for this study. Instruments used unique numerical identifiers to maintain confidentiality and no personally identifiable data collected on any questionnaire. The physicians and office staff did not know scale scores and these data did not become part of the participants' office medical record.

Demographic Questionnaire

This 21-question PI-developed measure assessed socio-demographic data such as age, birthplace, years of education, income, and other information that helped describe the study sample. Because planning and intention of pregnancy have been positively associated with postpartum depressive symptoms (Beck, C.T., 2001), the questionnaire also contained a questions about the planning and intention of the pregnancy. Questions regarding planning and intention were similar to the questions used on the Center for Disease Control and Prevention (CDC) Pregnancy Risk Assessment Monitoring System (PRAMS) core questionnaire. These questions were part of the Time 1 assessment. Three demographic questions were part of the Time 2 assessment. These questions addressed type of delivery (vaginal or C-Section), sex of infant, and mode of infant feeding (Appendix D)

Depression Measures

Beck Depression Inventory–II (BDI-II): This 21-item paper and pencil scale measures depression severity in persons 13 years and older (Beck, A.T., Steer, & Brown, 1996). Responses are given on a four-point scale (0 to 3) and summated for a range of scores from 0 to 63. Higher scores represent more depressive symptoms. The scale requires 5 to 10 minutes to complete and is available in English and Spanish. This measure has consistently shown strong psychometric

properties. The initial scale testing found coefficient alpha of .92 in outpatients and .93 in college students (Beck, A.T. et al. 1996). In studies using the BDI-II, coefficient alpha was .90, .91 and .92 in a sample of Mexican American adolescents (VanVoorhis & Blumentritt, 2007); in a sample of Canadian undergraduates (Dozois, Dobson & Ahnberg, 1998), and in a sample of college students with diverse ethnicities which included Hispanics (Carmody, 2005), respectively. Wiebe & Penley (2005) reported similarly strong psychometric properties in a study exploring the internal consistency and factor structure of the BDI-II in a sample of fluently bilingual undergraduates attending a U.S. Mexico border university. These researchers reported coefficient alpha of .89 for the English version and .91 for the Spanish version (Wiebe & Penley, 2005). In a medical sample of persons undergoing hemodialysis in a large city on the U.S. Mexico border, reported coefficient alpha for the Spanish version of the BDI-II was .92 (Penley, Wiebe & Nwosu, 2003). The BDI-II assessed general depression symptoms at Time 1 and Time 2, and was the proxy pretest.

Postpartum Depression Screening Scale (PDSS): This is a 35-item paper and pencil scale with seven subscales used for postpartum depressive symptom screening. This scale is available in English and Spanish, written in the context of motherhood, and can be completed in 15 minutes (Beck, C.T. & Gable, 2005; Beck, C.T. & Gable, 2000). Participants respond to a 5-point scale with total scale score ranging from 35 to 175 (Beck, C.T. & Gable, 2000). A scale score over 80 is predictive of a depressive episode while a score less than or equal to 59 is indicative of normal adjustment, according to the PDSS Scoring Manual (Beck, C.T. & Gable, 2002).

This scale also has an inconsistent responding index (INC Index) derived from 10 pairs of PDSS questions (Beck, C.T. & Gable, 2002). Parallel testing of this scale with the BDI-II and the

Edinburgh Postnatal Depression Scale (EPDS) revealed the three were highly correlated. Compared to the BDI-II and the EPDS, the PDSS achieved the highest combination of sensitivity at .94 and specificity at .98 (Beck, C.T. & Gable, 2001) for prediction of a postpartum depression episode. Initial psychometric testing of the English scale revealed a coefficient alpha range from .83 to .94 for the seven subscales (Beck, C.T. & Gable, 2000) and coefficient alpha from .75 to .90 for the seven subscales of the Spanish version (Beck, C.T. & Gable, 2003). Initial psychometric testing for the Spanish version of the instrument used 377 Hispanic women including 177 (47%) women of Mexican ethnicity. Coefficient alpha was .94 for the total PDSS for women of Mexican ethnicity (Beck, C.T. & Gable, 2003). Subsequent validation of the Spanish version of the scale showed a sensitivity of .84 and a specificity of .84 (Beck, C.T. & Gable, 2005). In a sample of women in the military psychometric properties were similar to the initial testing of the English version (Rychnovsky & Beck, C.T., 2006). Two studies used the instrument: Baker, Cross, Greaver, Wei & Lewis (2005) in a sample of Native American women and Wei, Greaver, Marson, Herndon, Rogers (2008) in a tri-racial sample from the South though neither study reported a coefficient alpha for the scale. The PDSS assessed postpartum depressive symptoms at three to seven weeks postpartum, and as such, was only a post-test measure.

Stress Measures

Perceived Stress Scale (PSS): This is a summated 14-item paper and pencil instrument used to assess the degree situations are stressful by tapping how unpredictable, uncontrollable and overloaded respondents feel their lives are (Cohen & Williamson, 1988; Cohen, Kamarck & Mermelstein, 1983; Ramirez-Gonzalez & Landero-Hernandez, 2007). Responses are on a 5-point scale (0 to 4) with the scale's seven positive toned questions reverse scored (Cohen &

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Williamson, 1988; Cohen et al. 1983). Initial psychometric testing of this scale used two university samples and one community sample with coefficient alpha reported as .84, .85 and .86; respectively for the three samples (Cohen et al. 1983). Validation of the Spanish version of the PSS took place in a randomly selected sample of 365 psychology students from a university in Mexico (Ramirez-Gonzalez & Landero-Hernandez, 2007). The Spanish version of the PSS had an alpha coefficient of .83 and a factor structure similar to the English version of the scale (Ramirez-Gonzalez & Landero-Hernandez, 2007). The PSS measured general stress at Time 1 and Time 2 in this study (Appendix F).

Pregnancy Related Stress Inventory (PRSI): This 35 item paper and pencil instrument based on the Prenatal Social Environment Inventory (PSEI) is used to measure exposure to and appraisal of stressors resulting from pregnancy related stress in multiple life domains (Ruiz, Fullerton, Guerrero, Garcia-Atwater & Dolbier, 2006). This scale uses a yes/no response format for endorsing a stressful situation and a 4-point qualifier ranging from "0= not at all upsetting" to "3= very upsetting" for appraising items endorsed with a yes response. Three open-ended questions are available for women to specify a concern not addressed by the previous 32 items. Psychometric testing of this instrument occurred in a sample of 322 pregnant Hispanic women living in south Texas (Ruiz et al. 2006). The scale is available in English and Spanish with reported coefficient alpha of greater than 0.80 for each version of the scale and 0.87 for the entire test sample including English and Spanish versions (Ruiz et al. 2006). Except for the study reporting the instrument's psychometric properties, the PI found no other studies reporting the use of this instrument in the literature. The PRSI measured pregnancy related stress at Time 1 only (Appendix H).

Coping Measure

Brief COPE

This is an abbreviated version of the 60-item COPE inventory that assesses responses to stress (Carver, Scheirer & Weintraub, 1989). Like the COPE, the Brief COPE assesses one's response to stress and has the flexibility to frame the scale items from a dispositional or concurrent/retrospective situational perspective (Carver et al. 1989; Carver, 1997). This study used the Brief COPE in a concurrent situational format to measure coping strategies to stress during pregnancy (Appendix J) and coping strategies in the postpartum (Appendix L).

The Brief COPE measures 12 specific coping strategies with two questions per coping strategy (Carver, 1997). The coping strategies assessed by the Brief COPE include self-distraction, active coping, denial, substance abuse, emotional support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, and religion (Carver, 2008). Items are rated on a 4 point scale (1= "I haven't been doing this at all" to 4= "I've been doing this a lot"). Initial psychometric testing of the Brief COPE English version used an adult sample of Hurricane Andrew survivors with coefficient alpha for each of the subscales ranging from .50 for venting to .90 substance use (Carver, 1997). Honey et al. (2003), in a study whose design is comparable to the current study used the Brief COPE to explore postpartum depressive symptoms in a sample of first time British mothers.

The Spanish version of the Brief COPE uses "neutral Spanish" to assess response to stress. Psychometric testing of the Spanish version of the scale occurred in a group of English–Spanish bilingual undergraduates in South Florida using a retrospective situational format (Perczek, Carver, Price & Pozo-Kaderman, 2000). Coefficient alpha for the 12 scales was generally higher in the Spanish scale (.62 for acceptance to .94 for use of social support) than the

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English version (.57 for behavioral disengagement to .93 for substance use) (Perczek et al. 2000). Studies using the Spanish Brief COPE in postpartum women of any Hispanic ethnicity were not located in the literature. The Brief COPE assessed situational coping strategies at Time 1 and Time 2.

Acculturation Measure

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

A revised version of the Acculturation Rating Scale for Mexican Americans (ARSMA), the ARASMA-II assesses acculturation using four factors: (a) language use and preference, (b) ethnic identity and classification, (c) cultural heritage and ethnic behaviors, and (d) ethnic interaction (Cuellar et al). Items primarily tap behavior aspects of acculturation using two distinct orthogonal scales; orientation and marginality (Cuellar et al. 1995). Orientation refers to inclination toward a Mexican or Anglo identity and measures the acculturation modes of assimilation or integration, whereas marginality refers to the acculturation modes of separation and marginalization. This study used only Scale 1 (orientation scale) of ARSMA-II as Scale 2 (marginalization scale is still considered experimental (Cuellar, Arnold & Maldonado, 1995); a point confirmed with one of the scale's developers (Dr. Bill Arnold, Personal Communication, November 2009).

Scale 1 is a 30 item 5 point scale (1= "not at all" to 5= "extremely often or almost always") composed of a 13 item Anglo orientation subscale (AOS) and a 17 item Mexican orientation subscale (MOS); to assess the study sample's acculturation characteristics (Cuellar, Arnold & Maldonado, 1995). A linear acculturation score for this scale is obtained by subtracting the MOS score from AOS score (Cuellar et al. 1995). Initial testing of the ARSMA-II Scale 1 showed coefficient alpha of .86 for the AOS and .88 for the MOS English version

(Cuellar et al. 1995) with one-week test-retest reliability coefficients of .94 for the AOS and .96 for the MOS (Cuellar et al.1995). The literature does not report coefficient alpha for the Spanish version of this scale. Studies exploring depressive symptoms in persons of Mexican origin used the ARSMA-II (Cuellar & Roberts, 1997). However, the PI did not find studies assessing the association between acculturation using the ARSMA-II and postpartum depressive symptoms in women of Mexican origin. The ARSMA-II (Appendix N) assessed acculturation level at Time 1.

3.7 DATA MANAGEMENT AND DATA INTEGRITY

The PI solely collected, entered, and verified the accuracy of all study data. This study used a two-tiered data management process. First, the PI entered Time 1 and Time 2 raw scores from completed measures into a Microsoft Office Excel 2007 spreadsheet and assessed entries for data entry inaccuracies such as out of range values and implausible total scores. Verification of possible data entry inaccuracies compared the written response given by the participant on the completed paper questionnaire to the spreadsheet score, and entries corrected, accordingly. Intermittently, the PI calculated descriptive statistics for continuous variables and frequencies for categorical data as a second check of data integrity. When all the participants who wanted to complete the study had, and all data entered and confirmed as correct, the PI uploaded the completed Excel spreadsheet into the IBM Statistical Package for Social Sciences (SPSS) version 20 for more comprehensive data analyses.

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Chapter 4: Results

This 10 month prospective, repeated measures, proxy pretest study explored the effects of self-reported stress appraisal, coping strategy, acculturation level, and general depressive symptoms in pregnancy and in postpartum on self-reported postpartum depressive symptoms in adult women of Mexican origin. Data collection occurred from February 1, 2011 to November 30, 2011 and analyzed using SPSS Software Package 20.0 and SPSS AMOS 20.0.

The framework guiding the study and analyses was Lazarus and Folkman's Transactional Model of Stress and Coping. The three principal aims for this study were:

Aim 1: To determine the extent to which self-reported depressive symptoms and pregnancy stress appraisals during the third-trimester of pregnancy predicted severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum.

Aim 2: To determine the extent to which third trimester coping strategies to pregnancy related stress predicted self-reported postpartum depressive symptoms at three to seven weeks postpartum in study participants.

Aim 3: To examine any moderating effect of acculturation level on the association of self-reported pregnancy related stress scores at the third trimester of pregnancy on depressive symptoms at three to seven weeks postpartum.

Although not contained in the original proposal, statistical analyses explored a fourth aim:

Aim 4: To test a comprehensive model predicting postpartum depressive symptoms at three to seven weeks post delivery from demographic characteristics, stress appraisals in pregnancy and postpartum, coping strategies used in pregnancy and postpartum, and general depression symptoms while controlling for Time 1 levels of these constructs.

One hundred and thirty five (135) participants enrolled in this study and 129 completed all phases of it. All data analyses used a sample size of 129. Data screening occurred before carrying out any analyses. Normality and outlier assessments followed recommendations from Tabachnick and Fidell (2007). Both the BDI-II (Time 1 and Time 2) and the PDSS had a positive skew not corrected with log linear or square root transformations. Therefore, all analyses including these depression measures used the non-transformed scale scores for each participant. Age and depression measures score outlier assessment used z-scores of 3.92 or greater to determine outliers. Age had no outliers, the BDI-II at Time 1 had no outliers, the BDI-II at Time 2 had two outliers, and the PDSS had no outliers. The BDI-II Time 2 outliers remained unadjusted as the Time 2 BDI-II scores were not a predictor in any study aims. The data set for the 129 participants completing the study had no missing data.

4.1 Socio-Demographic Characteristics

The average age of participants was 24.11 years (SD=5.05). The overwhelming majority (n=109, 84.5%) of participants spoke English and completed study forms in English. Most participants (n=92, 71.3%) reported the United States as their birth country, with participants having lived in the United States an average of 19.67 years (SD=7.93) and having lived in El Paso an average of 15.63 years (SD=8.98). Close to three quarters of all participants, (n=93, 72.1%) attended school in the United States and 18.6% (n=24) attended school in both the United States and Mexico. Twenty-one percent (n=28) of participants had less than a high school education and over one third (n=44, 34.1%) reported completing post secondary education which included completion of an Associate degree (n=8, 6.2%), Bachelor degree (n=3; 2.3%), Master degree (n=1; 0.8%), or technical-vocational training (n=32, 34.7%).

Most participants (n= 68, 52.7%) were partnered (45.7% married and 7% cohabitating). Over one third (36.4%) were employed (23.3% full time and 13.2% part time), 28.7% were homemakers and approximately 30% (n=38) were unemployed. The vast majority (n=92; 71.3%) reported a yearly household income of less than $30,000 and 17.1% (n=22) endorsed the household income response option "prefer not to comment". Except for one participant who reported self-pay, all were insured with five of the insured being covered by both private insurance and Medicaid. Most participants (n=104; 80.6%) had Medicaid coverage.

4.2 OBSTETRICAL CHARACTERISTICS

The typical participant was a multiparous woman who was more than 32 weeks pregnant (M=33.2, SD=3.1 range 28-39) at time of study enrollment, was previously pregnant 2.48 times (SD=1.58), and previously delivered 2.11 times (SD=1.24). A majority of participants (n=76, 58.9%) had not planned the current pregnancy and more than half of participants (n=67, 52%) did not intend to be pregnant with the current pregnancy. Specifically, 41.5% (n=54) wanted to be pregnant later and 10.1% (n=13) did not want to be pregnant at all. For participants intending to be pregnant, 10.9% (n=14) wanted to be pregnant sooner, and 37.2% (n=48) became pregnant when she wanted to be pregnant.

The average participant completed the second assessment at 3.8 weeks postpartum (SD=1.66) with a range of two weeks (n=1) to 12 weeks (n=2) at Time 2 follow up. Most participants delivered after 37 weeks gestation (n=127, 98.4%), with one participant delivering at 34 weeks and one participant delivering at 36 weeks. The average completed gestation for all participants was 38.5 weeks gestation (SD=.969). Over half of the participants delivered male infants (n=71, 55%) with most participants delivering by cesarean section (n=70, 54.3%). Just

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under half of all participants reported bottle-feeding their infant (n=58, 45%), while 15.5% (n=20) and 39.5% (n=51) reported breast-feeding and combination feeding, respectively.

4.3 INSTRUMENTS

Recall that the current study used seven questionnaires, including six existing questionnaires and one PI developed demographic questionnaire. Two measures of depressive symptoms, two stress appraisal measures, one coping measure, and one acculturation measure assessed the constructs of interest. Acculturation (ARSMA-II) and pregnancy related stress (PRSI) were only Time 1 measures and postpartum depressive symptoms (PDSS) a Time 2 measure only. All other constructs; stress (PSS), coping strategy (Brief COPE), and general depression (BDI-II) were repeated measures at Time 1 and Time 2.

Depression Measures

Beck Depression Inventory – II: This measure was a repeated measure and the proxy pretest for postpartum depression scores in this study. Score distribution at both Time 1 and Time 2 had a positive skew indicating participants' scores clustered in the minimal depression range of 0 – 13 (Beck, A.T. et al. 1996). At Time 1, 71.3% (n=92) endorsed minimal symptoms; total scale scores of 0 to 13; 18.6% (n=24) endorsed mild symptoms; total scale scores of 14 to 19; 7.8% (n=10) endorsed moderate symptoms; total scale scores of 20 to 28; and 2.3% (n=3) endorsed severe symptoms; total scale scores 29 to 63. The range of total scale score for Time 1 was 0 to 30. At Time 2, 92.2% (n=119) endorsed minimal symptoms; total scale scores of 0 to 13; 4.6% (n=6) endorsed mild symptoms; total scale scores of 14 to 19; 1.6% (n=2) endorsed moderate symptoms; total scale scores of 20 to 28; and 1.6% (n=2) endorsed severe symptoms; total scale scores 29 to 63. The range of total scale score at Time 2 was 0 to 32. Time 1 and Time 2 mean scores for this measure showed a statistically significant drop from Time 1 to Time 2.

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Postpartum Depression Screening Scale: The 35 item long version of this scale assessed the study's outcome measure, which was severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum. Based on the instrument's established cut points, over half of participants (n=73, 56.6%) screened normal adjustment with scores ≤ 59, approximately one-third (n = 40, 31%) screened for significant postpartum depressive symptoms; score of 60 – 79, and 16 participants (12.4%) screened positive for postpartum depression (Beck, C.T. & Gable, 2002). The mean score was 58.15 (SD = 19.9) with a range of scores from 35 to 136. This scale had a statistically significant, positive correlation with the BDI-II at Time 1 (r =.43, p=0.01) and at Time 2 (r = .71, p=0.01). Overall, the scale demonstrated strong reliability properties with an alpha reliability of .94 for the scale.

The PDSS has an integrated inconsistent responding index (INC). According to Beck, C.T. and Gable (2002), 10 pairs of PDSS items create the INC score. The INC score represents the difference of more than 1 point per item pair. An INC score of four indicates an 85% likelihood the items had an inconsistent response, a score of five indicates a 94% likelihood of inconsistent responses, and a score of six corresponds to a 97% likelihood items were inconsistently answered. In this study, n=119 (92.2%) had INC scores of 0 to 3, Six participants (4.7%) had a score of four, and four participants (3.1%) had a score of five suggesting approximately 8% of participants had discrepant responses among the 10 pairs of the PDSS items used in the INC. No participants scored higher than five. These results suggest that the majority of participants responded consistently.

Stress Measures

Perceived Stress Scale: This general stress scale assessed perceived stress at Time 1 and Time 2. Scale scoring used the developers' instructions (Cohen & Williamson, 1988; Cohen et al. 1983) with the scale's seven positive toned items reversed scored before summating a total scale score. The mean score at Time 1 was 20.8 (SD=6.8) and 17.6 (SD=8.1) at Time 2. Scores from Time 1 and Time 2 were positively correlated r =.51. The ranges of scores for this measure were 5 to 41 at Time 1 and 0 to 44 at Time 2. Higher scale scores suggest more perceived stress. This measure showed a significant drop in mean scores from Time 1 to Time 2 from 20.8 to 17.6 (p=.001).

Pregnancy Related Stress Inventory: This 35-item pregnancy related stress scale was only a Time 1 measure. This yes/no response format scale assessed the exposure to, currentness of and appraisal of stressors in multiple life domains resulting from pregnancy (Ruiz et al. 2006). Of the 129 participants completing the study, the two questions receiving the most yes responses were 1) physical changes resulting from pregnancy were unappealing (n= 52, 40.3%) and 2) being very moody (n=45, 34.9%). While both questions were labeled stressful, these stressors were not upsetting at all. Also endorsed as stressful were maternal adaptation items, however, less than 20% of participants responded yes to questions in this thematic category as being stressful. The PRSI and PSS had a statistically significant (2-tailed), positive correlation at Time 1 (r = .480, p <. 01) and Time 2 (r = .228, p < .01).

Brief COPE: This measure assessed coping from a concurrent situational perspective at Time 1 and Time 2 (Carver et al.1989; Carver, 1997). The number of coping scales for this measure was reduced using factor analysis. Specifically, principal components factoring and examination of the scree plot and eigenvalues revealed two factors.

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The subscales loading on factor 1, labeled Approach Coping included the acceptance, active coping, emotional support, positive reframing, planning, and self-distraction Brief COPE subscales at both Time 1 and Time 2. Approach coping reflects coping strategies that actively attempt to change a stressful situation (Brennan, Holland, Schuttle & Moos, 2012).

The subscales loading on Factor 2 at both Time 1 and Time 2 were the denial, and disengagement subscales. No participant endorsed substance abuse as a coping strategy at Time 1 but few participants reported substance abuse as a coping strategy at Time 2. Substance abuse loaded on avoidance coping at Time 2. Thus, the three Brief COPE subscales contained in the second factor, labeled avoidance coping, were denial, disengagement, and substance abuse. To keep coping factors consistent across Time 1 and Time 2, the substance abuse subscale remained with the avoidance factor at Time 1. In contrast to approach coping, avoidance coping uses coping strategies that evade or attempt to deal with emotions linked with a stressful situation (Brennan et al. 2012).

Three subscales did not load on either approach coping or avoidance coping. Further, they did not did not load as a third factor. These subscales were humor, religion, and venting. Consequently, these three subscales were not included any analyses. All analyses using coping as a variable used the two factors of approach coping and avoidance coping. Mean scores for both approach coping and avoidance coping had significant decreases from Time 1 to Time 2.

Table 1.1 reports scores and reliability statistics for each study instrument along with paired t-test comparisons and correlation coefficients for all repeated measures.

Table 1.1 – Summary of Scale Scores Time 1 and Time 2						
Instrument	Pregnancy Time 1 Mean (SD)	Postpartum Time 2 Mean (SD)	t	r (Time 1 with Time T2)	Cohen's d	Cronbach's Alpha (Time1/Time 2)
BDI-II	10.7 (7.0)	6.01(5.9)	$t(128)=9.26$***	.61	0.82	.86/.88
PSS	20.8 (6.8)	17.6 (8.1)	$t(128)=4.77$***	.51	0.42	.76/.79
Brief COPE Approach Avoidance	2.88 (.58) 2.65 (.75)	2.45 (.80) 2.40 (.79)	$t(128)=7.32$*** $t(128)=3.19$**	.58 .34	0.64 0.28	.82/.91 .61/.73
PDSS	N/A	58.15 (19.9)	N/A	N/A		.94/N/A
PRSI	4.3 (3.5)	N/A	N/A	NA		.73/NA
ARSMA-II AOS MOS Linear Score	3.6 (.75) 3.8 (.73) -.15 (1.16)	N/A	N/A	N/A		.87/NA .78/NA
Notes: Significance levels: **=.002, ***=.001, two-tailed BDI-II-Beck Depression Inventory-II, PSS-Perceived Stress Scale, PDSS-Postpartum Depression Screening Scale, PRSI-Pregnancy Related Stress Inventory, ARSMA-II-Acculturation Rating Scale for Mexican American-II, AOS-Anglo Orientation Scale, MOS-Mexican Orientation Scale						

4.4 BIVARIATE ANALYSES

Table 2.1 below shows the correlations among the main study variables along with means, standard deviations, and scale reliability coefficients. As shown, the demographic study variables of interest in this study, age, educational attainment and years living in the US, did not correlate significantly with BDI-II, PSS, or approach coping at either Time 1 or Time 2, and none had a statistically significant association with PRSI. However, age and educational attainment both had a statistically significant, weak, negative association with avoidance coping

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at Time 1 but neither correlated significantly with avoidance coping at Time 2. Of the demographic variables, only years living in the US had a statistically significant association with self-reported postpartum depressive symptoms ($r = .24$, $p < .01$).

Neither the AOS nor the MOS subscale of the ARSMA-II correlated with the BDI-II at Time 1; however, the MOS had a statistically significant negative, weak association ($r = -.18$, $p < .05$) with BDI-II at Time 2 while the AOS was not significantly associated with BDI-II at Time 2. Only the MOS had a statistically significant association with a stress measure and that was only with the PSS at Time 2. The AOS had a statistically significant, positive association with both approach coping at Time 1 and Time 2 and a significant, negative association with avoidance coping at Time 1 but was not significantly associated with avoidance coping at Time 2. The MOS was not significantly associated with either approach coping or avoidance coping at Time 1 or Time 2. While the MOS had a significant association with self-reported postpartum depression symptoms (PDSS), the AOS did not.

As expected, the BDI-II at both Time 1 and Time 2 had a significant, positive association with self-reported postpartum depressive symptoms (PDSS). Likewise, BDI-II scores at both Time 1 and Time 2 had a significant, positive association with all measures of stress at both Time 1 and Time 2 and with avoidance coping at Time 1 and Time 2. The only significant association between approach coping and BDI-II was Time 2 approach coping with Time 2 BDI-II.

Both measures of stress (PSS and PRSI) were significantly associated with avoidance coping at Time 1 and Time 2. At Time 1, both the PSS and PRSI were significantly associated with approach coping at Time 1. The PSS at Time 2 and the PRSI were both significantly

associated with approach coping at Time 2. All measures of stress at Time 1 and Time 2 were significantly associated with self-reported postpartum depressive symptoms (PDSS).

As anticipated, approach coping and avoidance coping at Time 1 and Time 2 showed little association while approach coping at Time 1 and approach coping at Time 2 had a moderate, positive, statistically significant association. While avoidance coping at both Time 1 and Time 2 were significantly associated with self-reported postpartum depressive symptoms (PDSS score), approach coping at either Time 1 or Time 2 was not significantly associated with PDSS score suggesting that stress appraisal may influence mood in the postpartum period while coping strategy may not. The association among coping strategies and PDSS showed some support for the study hypothesis that coping strategy would influence severity of self-reported depressive symptoms. Time 1 avoidance coping was significantly associated with PDSS score, as hypothesized, but Time 1 approach coping showed negligible association to PDSS score, the opposite of the hypothesis.

Table 2.1 Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	1	.18*	.41**	-.03	-.10	-.06	-.00	-.08	-.05	-.01	-.12	-.15	-.22*	.00	.00
2. Ed Attain		1	.05	.23**	-.11	.01	.08	-.04	-.11	.04	.06	.06	-.20*	-.09	.07
3. Years in US			1	.57**	-.42**	.08	.09	.12	.13	.05	.08	.07	-.16	-.05	.24**
4. ARSMA-II (Anglo Orient. Scale)				1	-.25**	-.02	.06	.01	.10	-.02	.26**	.22*	-.29**	-.04	.14
5. ARSMA-II (Mexican Orient. Scale)					1	-.08	-.18*	-.04	-.23**	-.10	-.02	-.06	.15	-.01	-.24**
6. BDI-II (T1)						1	.61**	.66**	.45**	.50**	-.01	.12	.51**	.23**	.43**
7. BDI-II (T2)							1	.47**	.58**	.46**	.09	.20*	.31**	.48**	.71**
8. Perceived Stress Scale (T1)								1	.50**	.48**	-.01*	.11	.50**	.30**	.39**
9. Perceived Stress Scale (T2)									1	.22**	-.14	.50**	.35**	.43**	.62**
10. Pregnancy Related Stress Inventory										1	.29**	.48**	.41**	.27**	31**
11. Approach Cope (T1)											1	.58**	.04	-.01	.01
12. Approach Cope (T2)												1	-.06	.17	.07
13. Avoidance Coping (T1)													1	.34**	.37**
14. Avoidance Coping (T2)														1	.37**
15. Postpartum Depression Screening Scale															1
Mean	24.1	N/A	19.7	3.8	3.7	10.7	6.0	20.7	17.6	4.3	5.7	4.9	2.7	2.4	58.1
SD	5.0	N/A	7.9	.73	.74	7.0	5.9	6.8	8.1	3.46	1.2	1.6	.76	.79	19.9
Alpha	N/A	N/A	N/A	.87	.87	.86	.88	.76	.79	.73	.82	.91	.61	.73	.94

Notes: *p< .05; **p<.01; T1=Time 1; T2=Time 2

4.5 PATH ANALYSIS

Path analyses examined multivariate associations among the study variables and as outlined in the four specific aims described above. Separate analyses examined each individual aim. The bivariate correlation analyses described above guided the determination of control variables for each model. Except for age and educational attainment, demographic and obstetrical variables were not significantly associated with the current study's outcome variable and were not potential control variables.

Control variables were exogenous variables in each model and allowed to correlate freely. Although each model included control variables, all path diagrams except Figure 3.1 omit control variables in order to simplify the presentation of the model. Error terms were part of each model though not depicted in any of the models. Parenthetical correlation coefficients denote non-significant paths.

Aim 1: To determine the extent to which self-reported depressive symptoms and pregnancy stress appraisals during the third-trimester of pregnancy predict severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum.
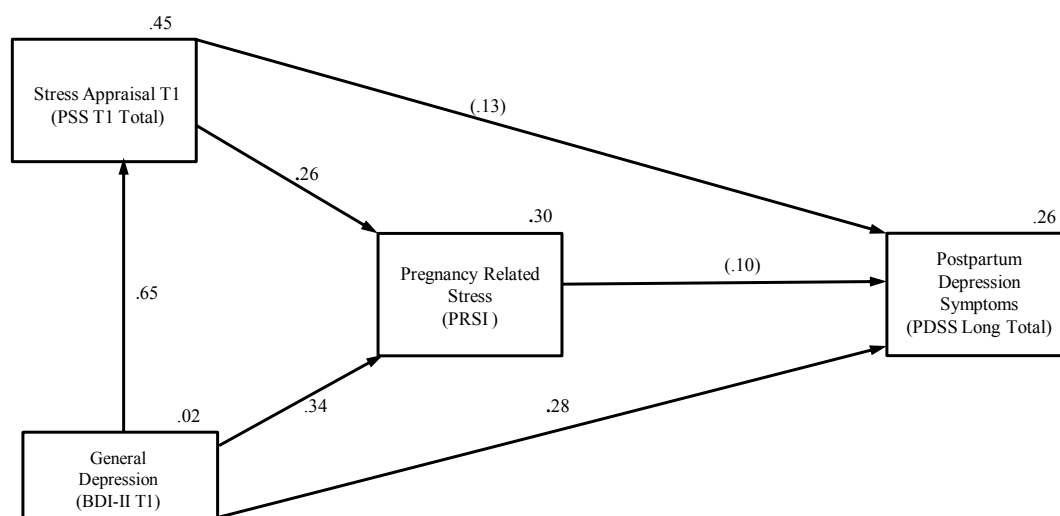
Figure 2.1: Stress Influence in Pregnancy on Postpartum Depressive Symptoms

Notes: T1=Time 1, PSS=Perceived Stress Scale, BDI-II=Beck Depression Inventory-II, PRSI=Pregnancy Related Stress Inventory, PDSS Long=Postpartum Depression Screening Scale Long Version
Parenthetical correlation coefficients denote non-significant paths.
Covariates included though not depicted in model are age, educational attainment and years lived in the US. Error terms included though not depicted in model.

Data considered in this analysis included self-reported general stress appraisal and pregnancy related stress appraisal in the third trimester of pregnancy and their associations with self-reported postpartum depressive symptoms at three to seven weeks post-delivery. For this model, postpartum depression scores were regressed on measures of stress, general depression, and pregnancy related stress with the latter variable serving as a mediator for the associations between stress and general depression and post-partum depression (Figure 2.1). The control variables for this analysis (not shown) were age, educational attainment and years lived in the United States (US).

The model depicted in Figure 2.1 showed good fit to the data. Chi-square = .289 (NS) with a Comparative Fit Index (CFI) of 1.000 and Root Mean Square Error of Approximation (RMSEA) of .000. As depicted in Figure 2.1, this model accounted for 26% of the variance in self-reported postpartum depressive symptoms. Of the control variables included in the model, only the association between years in the US and postpartum depressive symptoms was significant (b = .21, p = .015).

As shown, although stress and general depression both predicted pregnancy related stress, only general depression significantly predicted postpartum depressive symptoms. In contrast, neither stress nor pregnancy-related stress related to postpartum depressive symptoms as was predicted. Overall, the results of this model suggest that depression reports show modest consistency over time, and that stress, whether general or specific to pregnancy, did not contribute unique variance to the prediction of postpartum depressive symptoms. The association between years in the US and postpartum depression scores suggests that some aspects of acculturation may be associated with depressive symptoms in this sample.

Aim 2: To determine the extent to which third trimester coping strategies to pregnancy related

stress predict self-reported postpartum depressive symptoms at three to seven weeks postpartum.
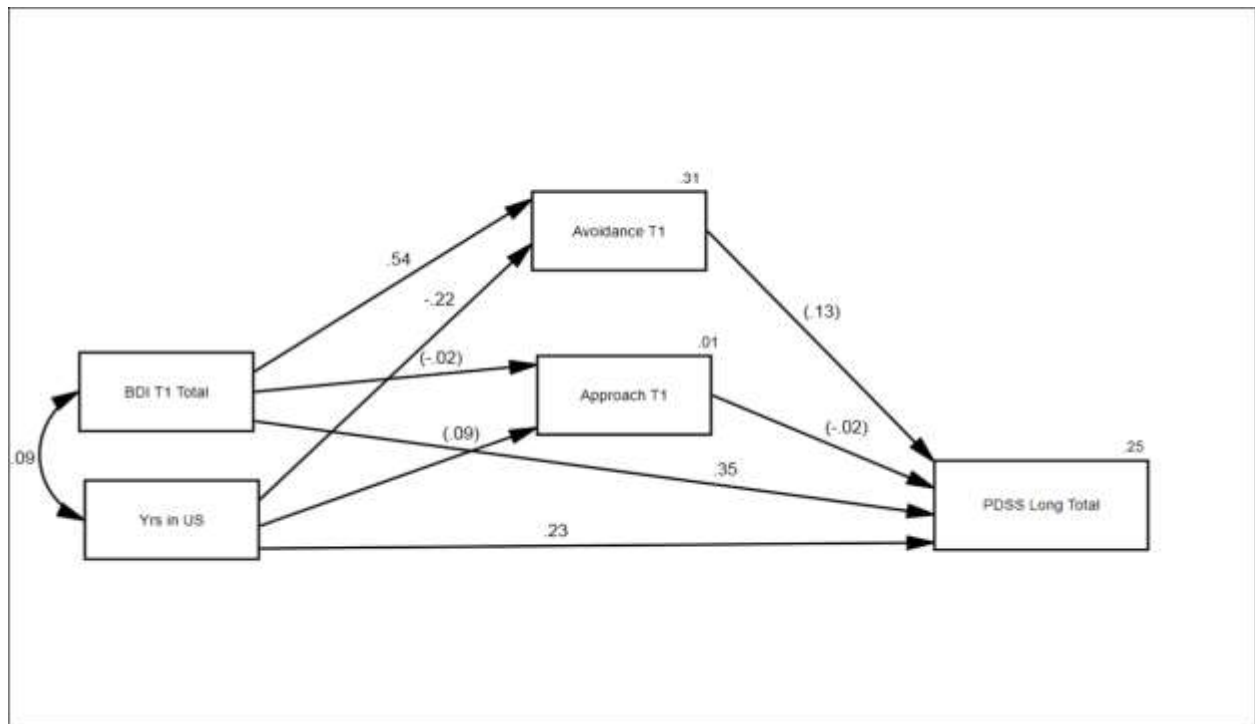
Figure 3.1: Coping Influence in Pregnancy on Postpartum Depressive Symptoms

Notes: Covariates (BDI-II Time I and years in US) included in model depiction. Parenthetical
correlation coefficients denote non-significant paths. Error terms included though not depicted in model.

The variables of interest for this analysis included self-reported coping strategies in the

third trimester of pregnancy assessed with the Brief COPE and their association with self-

reported postpartum depressive symptoms at three to seven weeks post-delivery. Coping

strategies included the approach and avoidance scales derived from the Brief COPE. In this

model, postpartum depressive symptoms (PDSS Long total scores) were regressed on approach

coping, and avoidance coping. General depression (BDI-II total at Time 1) and years in the US

were the control variables for this analysis and treated as exogenous variables.

The model depicted in Figure 3.1 showed good fit to the data, Chi-square = .739 (NS), CFI of 1.000, and RMSEA of .000. As depicted, this model accounted for 25% of the variance in self-reported postpartum depressive symptoms. Both control variable included in the model were positively associated with self-reported postpartum depressive symptoms and both were statistically significant. The association between general depression (BDI-II, Time 1) and postpartum depressive symptoms (PDSS Long Total) scores was (b = .35, $p <.001$) while years lived in the US was (b=.23, p=.004).

Contrary to expectations, neither approach nor avoidance coping significantly related to postpartum depressive symptoms. However, avoidance coping had a statistically significant association with both control variables; BDI-II (b=.54, p<.001) and years lived in the

US (b= -.22, p=.003) and together accounted for 31% of the variance in avoidance coping during pregnancy.

Overall, the results of this model suggest that approach coping and avoidance coping exerted little influence on self-reported postpartum depressive symptoms at three to seven weeks postpartum. The strong positive association between BDI-II (Time 1) and avoidance coping in pregnancy and the weak negative association between BDI-II (Time 1) and approach coping suggests that mood may influence how a woman copes during pregnancy and that those strategies may have little carry over influence onto mood in the postpartum period.

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Aim 3: To determine the moderating effect of acculturation level on the association of self-reported pregnancy related stress scores at the third trimester of pregnancy on postpartum depressive symptoms at three to seven weeks postpartum.
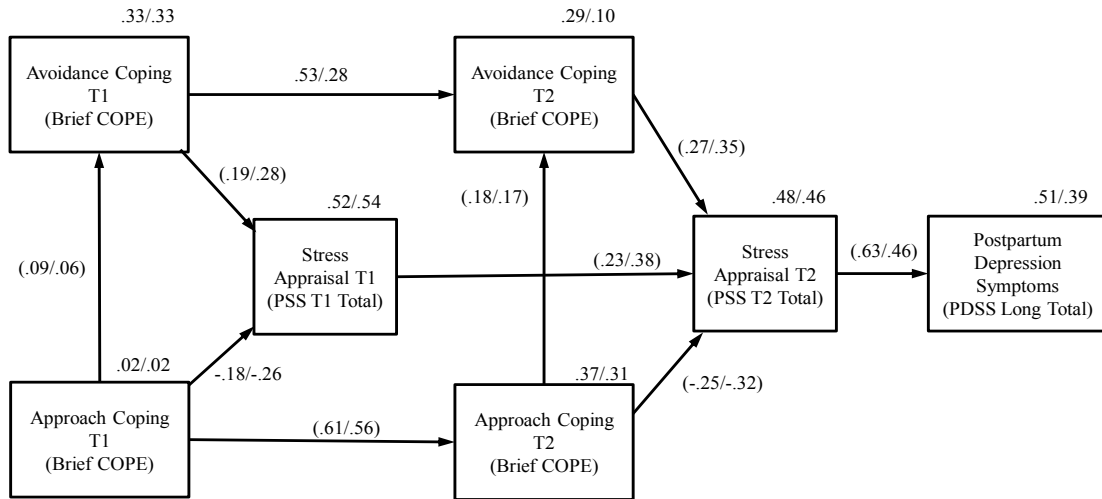
Figure 4.1: Acculturation Moderation on Postpartum Depressive Symptoms

Notes: T1=Time 1, T2=Time 1, Brief COPE=Brief COPE, PSS=Perceived Stress Scale, PDSS
Long=Postpartum Depression Screening Scale Long Version
The first coefficient is for the higher acculturation level group, the second for the lower acculturation level group. Parenthetical correlation coefficients denote non-significant paths.
Covariates included though not depicted in model are BDI-II Time 1 and years lived in the US. Error terms included though not depicted in model.

This aim explored the moderating effect of acculturation on self-reported postpartum depressive symptoms at three to seven weeks postpartum. It was hypothesized that lower

acculturation level would weaken the association between stress in pregnancy and self-reported postpartum depression symptoms (PDSS Long version scores).

To test the influence of acculturation on self-reported postpartum depressive symptoms, the sample was divided into two groups using the ARSMA-II median linear acculturation score as the cut point for creating the groups. This split resulted in a lower acculturation level group (n= 64) and higher acculturation level (n=65). Next, SPSS AMOS 20 was used to test a model that constrained the path coefficients to be equal compared with model that estimated them freely for each level of acculturation. Moderation in this context would be indicated by a significantly improvement in model fit, estimated with the chi-square difference test, when these parameters were allowed to vary across groups. Comparatively, the results of the chi-square difference test suggested that the two models had a statistically significant difference χ^2 (df=10) = 23.9, p = .01.

The second step in assessing moderated mediation was to examine which of the 10 paths allowed to vary freely actually helped account for the significantly better fit of the unconstrained model. In these analyses, all the paths were again constrained and each path freed in sequential order. Single df chi-square tests assessed whether freeing the parameter across groups significantly improved model fit. The results of these tests showed that only two paths between the models varied substantially between groups such that it improved model fit p < .05. These were the paths between avoidance coping at Time 1 to avoidance Time 2 and approach coping at Time 1 and stress (PSS Time 1). The former result suggests that avoidance coping scores were significantly more consistent across time for the lower versus the higher acculturation level group. The second shows that the lower acculturation level group showed a negative association between approach coping and stress whereas the higher acculturation level group showed a positive association.

Specific Aim 4: To test a comprehensive theoretical model predicting postpartum depressive symptoms at three to seven weeks from demographic characteristics, stress appraisals in pregnancy and postpartum, coping strategies used in pregnancy and postpartum and general depression symptoms while controlling for Time 1 levels of these constructs.
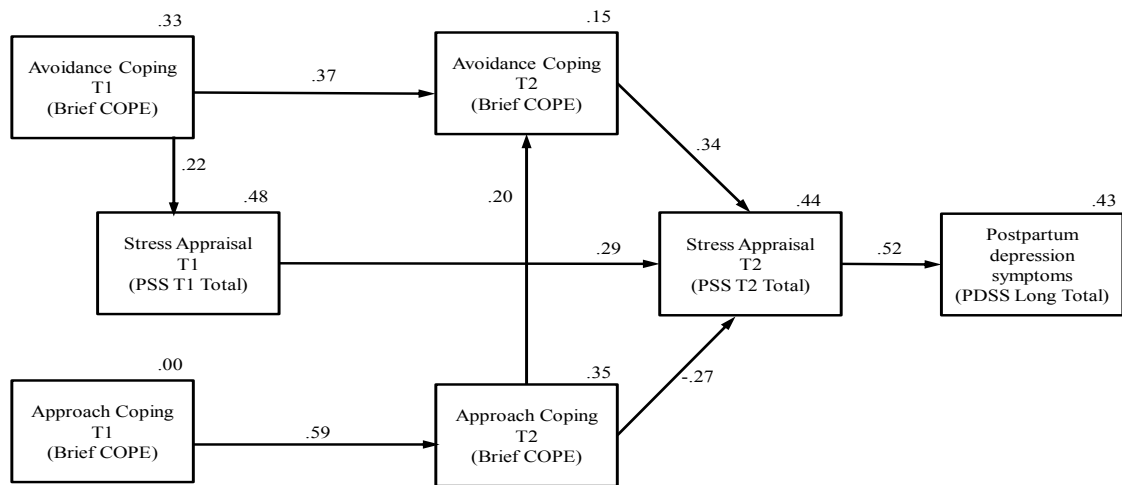
Figure 5.1: Influence of Stress and Coping on Postpartum Depressive Symptoms

Notes: T1=Time 1, T2=Time 1, Brief COPE=Brief COPE, PSS=Perceived Stress Scale, PDSS Long=Postpartum Depression Screening Scale Long Version
Covariates included Time 1 Beck Depression Inventory-II (BDI-II) and years lived in the US. Error terms included though not depicted in the model.

This aim was an exploratory evaluation of Lazarus and Folkman's Transactional Model of Stress and Coping, the study's conceptual and theoretical framework and not part of the original proposal.

The theoretical guide for this study and each of its aims was Lazarus and Folkman's Transactional Model of Stress and Coping. This final aim juxtaposed the natural phenomena of pregnancy and childbirth with the theoretical underpinnings of Lazarus and Folkman's Transactional Model of Stress and Coping to describe how stress and coping operated in a community sample of pregnant and postpartum adult women of Mexican origin.

Model evaluation began with the model diagram in Figure 4.1. Using an iterative process, suggested modification indices guided path additions and deletions to optimize overall data fit for this sample. The model depicted in Figure 5.1 was the model with the best model fit indices.

This final model looked at the influence of Time 2 stress appraisal (PSS T2 Total), coping (approach coping, and avoidance coping) on self-reported postpartum depressive symptoms (PDSS Long Total) at three to seven weeks postpartum while controlling for all Time 1 variables and covariates. This model accounted for 43% of variance in self-reported postpartum depressive symptoms (PDSS Long Total) and showed good fit to the data with fit indices of χ^2 (df=20) = 28.7, p = .09; CFI = .975, and RMESA = .058. All direct paths in this model were statistically significant at p < .05.

Stress appraisal (PSS T2 Total) directly influenced self-reported postpartum depression (PDSS Long Total) scores (b = .52). Approach coping at Time 1 directly affected approach coping at Time 2 (b=.59) with approach coping and avoidance coping indirectly affecting postpartum depressive symptoms through stress. The indirect effects of coping were -.14 for approach coping and .18 for avoidance coping. As depicted, the data suggest support for the transactional nature of stress, coping, and the ensuing emotion (self-reported postpartum depressive symptoms) in pregnancy and childbirth.

Chapter 5: Discussion

5.1 OVERVIEW

This study explored the impact of stress, coping strategies, and general depression symptoms in pregnancy and postpartum on the severity of self-reported postpartum depressive symptoms in a community sample (n=129) using Lazarus & Folkman's Transactional Model of Stress and Coping as a theoretical orientation. Overall, the current study found that over half of study participants screened normal for postpartum adjustment but that 43.4% (n=56) experienced postpartum depressive symptoms at three to seven weeks postpartum. Of those participants experiencing depressive symptoms, 31% (n=40) reported significant symptoms while 12.4% (n=16) screened positive for postpartum depression based on established PDSS cut scores. All of these participants were referred to their physician for further evaluation and possible mental health referral.

The hypothesis that pregnancy related stress and that depressive symptoms in pregnancy would predict higher severity of self-reported postpartum depressive symptoms at three to six weeks postpartum was partially supported by study findings. Results showed that pregnancy related stress did not significantly predict severity of postpartum depressive symptoms. However, depressive symptoms in the third trimester of pregnancy significantly predicted higher levels of self-reported postpartum depressive symptoms, as hypothesized.

Study results also did not support the hypothesis that coping strategy in pregnancy would predict severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum. It was hypothesized that approach coping would predict lower postpartum depressive symptoms while avoidance coping would predict higher postpartum depressive symptoms. The study found coping strategies had little influence on self-reported postpartum depressive symptom at three to seven weeks postpartum. Approach coping had a weak negative

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association with self-reported postpartum depressive symptoms while avoidance coping had a weak positive association with self-reported postpartum depressive symptoms and neither approach coping nor avoidance coping significantly predicted postpartum depressive symptoms.

The study also examined whether acculturation would moderate the association of pregnancy related stress in the third trimester of pregnancy and self-reported postpartum depressive symptoms.   It was hypothesized that lower acculturation levels would moderate the association between stress in pregnancy and severity of postpartum depressive symptoms at three to seven weeks postpartum. Results indicated that lower acculturation level moderated the association between stress in pregnancy and severity of postpartum depressive symptoms at three to seven weeks postpartum, as hypothesized.

Lastly, the study examined a comprehensive model of stress and coping using Lazarus and Folkman's Transactional Model of Stress and Coping as the theoretical guide. Study data suggest support for Lazarus and Folkman's Transactional Model of Stress and Coping and resulting emotional outcome of self-reported postpartum depressive symptoms. Specifically, even when controlling for Time 1 levels of stress, coping, and depression, Time 2 stress (directly) and coping (indirectly) affected levels of postpartum depressive symptoms in a sample of 129 adult women of Mexican origin living on the US and Mexico border. The final model accounted for 43% of variance in reported postpartum depressive symptoms when examining Time 2 stress, approach coping and avoidance coping, while controlling for all Time 1 variables and covariates.

The subsequent sections present the study sample's demographic characteristics and key findings among the study variables as they relate to the study's specific aims. Study findings will

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be explored comparatively to findings from similar published studies with concluding thoughts and implications for future research presented.

5.2 DEMOGRAPHIC CHARACTERISTICS

In general, the current study sample was not completely representative of the demographic characteristics of females in the region. Compared to the US Census (2010) demographic profile for the city of El Paso, study participants were younger than the median age of 34 years for female residents, generally had a lower household income than the city median of $39,442, and slightly higher educational attainment for high school graduate or higher of 78.3% versus 74.6% for the city. As expected, the proportion of insured women was high at 99% of participants. Pregnancy and childbirth presents a unique situation in that uninsured or underinsured women in Texas may qualify for Texas Medicaid or Children Health Insurance Program (CHIP) perinatal benefits (Texas Health and Human Services Commission). Both programs offer prenatal care and postpartum care coverage for pregnant women who meet program specific income requirements. Combined, ninety percent of participants in this study reported Medicaid and CHIP perinatal as their payer source creating range restriction for insurance status; hence the variable was not used as a covariate in any analysis.

5.3 BIVARIATE CORRELATIONS

This study's primary outcome was severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum assessed by the PDSS (Beck, C.T. and Gable, 2001a; Beck, C.T. and Gable, 2000). Among the study's demographic variables, only years lived in the US associated positively to self-reported postpartum depressive symptoms. This finding suggests the possibility of an acculturation component or the influence of variables associated to attitude and values not explored in this study.

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In contrast to other studies, the present study generally found few associations between demographic variables and postpartum depressive symptoms among women of Mexican origin. The literature shows that being young, being single, living in poverty, and low educational attainment predicts postpartum depressive symptoms. This study, however, did not find similar associations. While the current study sample was youthful, more than half were partnered; either married or cohabitating, most completed high school with approximately one third completing post secondary education, all had insurance though most reported an annual household income of less than $30,000 per year. The differences among the demographic characterizes in the current study participants compared to what the literature reports possibly contributed to the lack of similar associations specifically relative to educational attainment, being partnered, and having insurance all of which may have facilitated health care access to perinatal care, better social support and potentially a clearer understanding of anticipatory guidance offered by the clinicians relative to postpartum depressive symptoms and the mitigation of such symptoms. In total, the sample's demographic characteristics may have helped these participants manage expectations about their pregnancy and the postpartum which may have influenced perceived stress and been protective of an uplifted mood in the postpartum period. The negative correlation between Time 1 stress and educational attainment and Time 2 stress and educational attainment, albeit small, might offer some support for this rationale. Alternatively, this was a convenience sample so sampling technique may have influenced the findings.

The present study also examined the associations between intention and planning of the current pregnancy to self-reported postpartum depressive symptoms. Both have been associated with higher depressive symptoms. This study found that approximately 60% of participants reported not planning the current pregnancy and 52% did not intend to become pregnant with the

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current pregnancy. Of the 52% of participants not intending to be pregnant, 10% of those participants had an unwanted pregnancy and 42% had a mistimed pregnancy. Unwanted pregnancy is defined as not wanting to be pregnant now or anytime in the future while a mistimed pregnancy is defined as wanting to be pregnant at some point in the future but not now (Finer and Zolna, 2011).

Comparatively, the percentage of unintended pregnancy in this sample mirrored the national trends for unintended pregnancies among Hispanic women reported by Finer and Zolna (2011). The rate in the current study is also consistent with the 2009 Texas state PRAMS for Hispanic women which showed rates of 12.5% for unwanted pregnancies and 35.7% for mistimed pregnancies (Texas PRAMS). However, the current study found slightly more women who did not plan the current pregnancy than the Hispanic specific 2009 Texas PRAMS results.

Although this study was not intended to explore general reproductive health issues, it is clear that the concern of unintended and unplanned pregnancies may need further investigation in this region. Neither intention to be pregnant nor planning to be pregnant was significantly associated with self-reported postpartum depressive symptoms in the current study. The lack of association among these study variables may be the result of participants' adaptation and adjustment during pregnancy to the reality of being pregnant. Though participants did not intend or plan the current pregnancy, the event may not have been overly taxing to participants' emotional well being and not perceived as overly stressful. This rationale is somewhat evidenced by the association among stress (PSS score), approach coping and avoidance coping with pregnancy intention and planning at Time 1 and Time 2. Neither intention nor planning to be pregnant with current pregnancy was significantly associated with either stress (PSS score) or avoidance coping at Time 1 and Time 2. Approach coping was significantly associated with only

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intention to be pregnant at Time 1 ($p = .04$, two-tailed) which may suggest participants took proactive steps to manage the pregnancy in a manner that promoted adjustment and adaptation to the infant's birth and care.

Another explanation for the lack of association with self-reported postpartum depressive symptoms may be that while the pregnancy was not intended or planned, participants did not perceive the pregnancy negatively or disruptive to elicit an emotional outcome of elevated self-reported postpartum depressive symptoms. Additionally, pregnancy intention and pregnancy planning were not significantly associated with general depressive symptoms (BDI-II score) at either Time 1 or Time 2 thus adding some support for the alternative explanation.

As presented in the results section, the primary study variables that most strongly associated with self-reported postpartum depressive symptoms in this study were: general depressive symptoms (BDI-II) scores at Time 1 and Time 2, stress (PSS) scores at Time 1 and Time 2, avoidance coping (Brief COPE) at Time 2, and the Mexican Orientation Scale (ARSMA-II). Findings for these primary study variables will be discussed further relative to each specific aim.

5.4 DEPRESSIVE SYMPTOMS

Two different instruments assessed self-reported depressive symptoms in this study; the BDI-II and the PDSS. The BDI-II, a general depression measure (Beck A.T. et al. 1996), was a proxy pretest measure and a repeated measure of self-reported general depressive symptoms at Time 1 and Time 2. The PDSS (Beck, C.T. and Gable, 2001a; Beck, C.T. and Gable, 2000) assessed the severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum. General depressive symptoms (BDI-II score) both at Time 1 and Time 2 associated with PDSS score. Overall, participants reported minimal general depressive symptoms at Time 1

and Time 2 and over half screened normal adjustment three to seven weeks postpartum. The self-reported third trimester depressive symptoms prevalence in the current study was 28.7% and 43.4% for self-reported postpartum depressive symptoms at three to seven weeks postpartum. The current study classified symptoms severity using the published cut scores for each of the scales (Beck, A.T. et al, 1996; Beck, C.T. & Gable, 2002) and calculated point prevalence based on those cut scores.

The current study third trimester depressive symptom point prevalence of 28.7% was higher compared to other studies. It was more than triple the 9% point prevalence at 28 weeks gestation (early third trimester) for a community sample (n=1662) from the Boston area that included Hispanics and approaching double the point prevalence of 16% for Hispanics in that study (Rich-Edwards et al., 2006).

Similarly, a systematic review of 21 articles (n=19,284) detailing prevalence of depressive symptoms in pregnancy by trimester for varying races and ethnicities using self-reported symptom assessment with the EPDS, the BDI, BDI-II, and structured interview reported a meta analytic point prevalence for self-report method studies of 7.4% in the first trimester, 12.8% in the second trimester and 12.0% in the third trimester (Bennett et al. 2004). The 28.7% observed in the current study is more than double the reported point prevalence for any trimester in the review for the self-report method.

However, the meta-analytic point prevalence climbed dramatically in the second and third trimesters for women of lower socioeconomic status compared to the overall study point prevalence. The second trimester point prevalence increased to 47% from 12.8% and increased to 39% from 12.0% in the third trimester. Bennett et al. (2004) also reported that compared to self-report method, structured interview method lowered point prevalence as a result of better

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qualitative analysis of confounding physical and somatic complaints normally associated with pregnancy.

While the point prevalence reported by Bennett et al. (2004) for women of lower socioeconomic status, is slightly higher than the findings in the current study, it is better aligned with the current study finding. The agreement between the meta analytic findings and the current study may be due to the fact the current study's participants were economically disadvantaged as evidenced by their reported annual household income and their prenatal insurance coverage.

Factors possibly influencing the difference in point prevalence among the current study and those discussed is the depression measure used and the time symptom assessment occurred during pregnancy. Rich-Edwards et al. (2006) used the EPDS at 28 weeks gestation whereas the current study used the BDI-II on average at 33 weeks gestation. Assessing self-reported depressive symptoms later in pregnancy in the current study may have contributed to more physical disturbances being endorsed as depressive symptoms when in fact the symptoms may be symptoms associated with advancing pregnancy but not differentiated by the BDI-II for a pregnant versus non-pregnant state. For example, changes in energy level, sleep pattern, concentration and appetite are within the spectrum of normal changes in pregnancy though part of depressive symptoms. Also, a detection bias that cannot be overlooked in the current study is that the third trimester depressive symptoms reported by participants may be an extension of symptoms experienced throughout pregnancy.

The depressive symptoms point prevalence among the trimesters of pregnancy is not easily quantified; consequently not well understood, as evidenced by wide range of point prevalence reported in the literature. Contributing to this knowledge gap is lack of evidence based screening protocols delineating which measure to use, when to assess symptoms, the

frequency for assessing symptoms, and the cut scores to use to guide a decision about the severity of symptoms endorsed and the appropriate intervention, if any. Interestingly, in a systematic review of risk factors for depressive symptoms in pregnancy, Lancaster et al. (2010) reported that in the 159 articles that met inclusion criteria for their study, 24 different depression measures were used.

Further, the confounding effects of physical and somatic changes considered normal changes of pregnancy may be symptoms for a positive depressive symptoms screen. Normal changes of pregnancy and possible disordered mood changes are not easily differentiated by self-report within the context of pregnancy. A more precise assessment of depressive symptoms during pregnancy requires a structured clinical interview which is not part of routine obstetrical care. However, even structured interview, though more precise use various diagnostic criteria when performed (Lancaster et al, 2010).

Addressing these methodological issues may facilitate understanding and quantifying a standardized assessment point for depressive symptoms in pregnancy and may provide a solution for quantifying prevalence uniformly but the extent to which these changes would impact maternal and infant outcomes, is speculative. Unlike certain pregnancy related conditions such as gestational diabetes whose symptoms begin around the 24th week of pregnancy and for which evidence based screening protocols and care guidelines exist, (Dr. Jose Gonzalez-Sanchez, Personal Communication, May 29, 2013), the same is not true for depression screening in pregnancy. In fact, the American College of Obstetrics and Gynecology (ACOG) committee on obstetric practice reaffirmed in 2012 its 2010 (Committee Opinion Number 453) regarding depression screening in pregnancy and postpartum. While the committee acknowledged the potential benefits of depressive symptoms screening, the committee did not support universal

screening of depressive symptoms in pregnancy and postpartum due to lack of evidence for such practice. ACOG's position for not supporting universal screening echoes the methodological issues discussed above. Depression is a mood disorder that may occur at anytime during the pregnancy and not a condition that is uniformly bound by symptoms that have a specific zenith and nadir. Therefore, a prudent approach to screening may be identifying women who are at risk for developing postpartum depression using known risk factors and conducting ongoing assessments during pregnancy and into the postpartum with accompanying clinical interventions and mental health referral, as indicated based on clinical findings.

The second measure of depression in this study assessed self-reported postpartum depressive symptoms at three to seven weeks postpartum using the PDSS. The BDI-II and the PDSS are both based on Diagnostic and Statistical Manual IV depression criteria. The two measures showed a strong, positive association ($r = .81$) in parallel psychometric testing (Beck, C.T. & Gable, 2001b). The current study also found the two measures had a strong, positive association both at Time 1 and Time 2.

As with depressive symptoms in pregnancy, the literature reports varying point prevalence for postpartum depressive symptoms in community samples of women of Hispanic origin. Among Hispanic women, the prevalence is reported as low as 2.5% for moderate to severe symptoms at six weeks postpartum using the PDSS (Wei, Greaver, Marson, Herndon, & Rogers, 2008) and as high as 53% for moderate to severe depressive symptoms at six weeks postpartum using the CES-D (Martinez-Schallmoser, Telleen, & MacMullen, 2003). This inconsistency in prevalence may be attributed to the same methodological factors discussed above.

Conventionally, postpartum depressive symptoms assessment occurs four to six weeks postpartum, however, some researchers assessed symptoms as early as two weeks postpartum and a found point prevalence of 47% for Hispanic mothers (n=147) using two items of the Primary Care Evaluation of Mental Disorders Procedure screening questionnaire (Howell, Mora, Horowitz, & Leventhal, 2005) and 42.8% for Hispanic mothers (n=3952) of whom 1377 were women of Mexican origin in a multisite study of depressive symptoms in the immediate postpartum using the CES-D (Kuo et al, 2004). Assessing postpartum depressive symptoms too soon after delivery may over estimate symptom prevalence by confounding the effects of postpartum blues which manifest themselves similarly to postpartum depressive symptoms. Postpartum blues are considered normal, are usually experienced by new mothers in the first two weeks after delivery, and resolve themselves (Flynn, 2005). As with pregnancy, the confounding effects of physical and somatic changes considered normal in postpartum mimic depressive symptoms; for example, new mothers experience loss of energy and changes in appetite and sleep. Consequently, general depression measures and postpartum depression measures that do not contextually clarify symptoms may over estimate depressive symptoms. Currently, of all the postpartum depression specific screening measures only the PDSS is written in the context of new motherhood (Beck, C.T., & Gable, 2001a, Beck, C.T., & Gable, 2001b). It was this feature along with its strong psychometric properties that made the measure desirable for the current study.

The overall postpartum depressive symptoms prevalence in the current study was 43.4%; 31% positive for significant depressive symptoms and 12.4% positive for probable DSM-IV postpartum depression diagnosis based on the PDSS established cut scores for the long version of the measure. Compared to other studies using the PDSS long version, the level of depressive

symptom prevalence at three to seven weeks postpartum in the current study was analogous to some reported results and disparate to other reported results.

In a study (Mancini, Carlson, & Albers, 2007) conducted at a large community obstetrical practice in Albuquerque, New Mexico using convenience sampling of adult women (n=740) of whom 47% were Hispanic, 36% of all participants screened positive for postpartum depressive symptoms at six weeks postpartum using the PDSS. Of those who screened positive, 20% screened positive for significant depressive symptoms and 16% for probable postpartum depression diagnosis. For Hispanic participants specifically (n=355), 38% screened positive for postpartum depressive symptoms; 21% positive for significant depressive symptoms and 17% for probable DSM-IV postpartum depression diagnosis. The findings from the current study are analogous to both the overall sample and Hispanic specific point prevalence reported by Mancini et al.(2007).

Wei, et al. (2008) in a study of 586 adult women drawn from a convenience sample of multi racial and multi ethnic women receiving care at a rural public obstetrical clinic in North Carolina reported an overall postpartum depressive symptoms prevalence of 25.3% at six weeks postpartum using the PDSS. Among all participants, Hispanics had the lowest prevalence at 2.5% ($p <.05$) compared to the other groups. The postpartum depressive symptoms prevalence reported by these researchers is vastly lower than both the current study point prevalence and what Mancini et al. (2007) reported.

Similar to Wei, et al. (2008), Baker and Oswalt (2007), assessed postpartum depressive symptoms using the PDSS in a convenience sample of diverse women (n=498) that included Hispanics. The overall six week postpartum depressive symptoms point prevalence was 22.5% Hispanics had the lowest mean score on the PDSS of 13.07 (SD=19.6) though Hispanic specific

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symptoms point prevalence was not reported. The mean score reported by Baker and Oswalt (2007) for Hispanics is considerably lower than 58.1 (SD=19.9) observed in the current study. However, based on mean score, it appears participants in the current study had more depressive symptoms than the Hispanics in the Baker and Oswalt (2007) study despite both sample mean scores suggesting normal adjustment.

While the PDSS showed consistency with other studies including Hispanic women, it had little concordance with the Time 2 BDI-II overall prevalence of 7.8% in the current study. Whether this is a common finding for the BDI-II is unknown. Except for a study by Beck, C.T. and Gable (2001b), that compared the PDSS and BDI-II performance in a parallel test, no other reported study used a general depression scale and a postpartum specific depression scale to simultaneously assess postpartum depressive symptoms. This discrepancy in prevalence may be due to specificity and sensitivity indices; that is, the measures' ability to correctly identify afflicted from not afflicted. In a parallel comparison using established cut scores for the BDI-II and PDSS, the BDI-II had a specificity of 100% and sensitivity of 56% compared to the PDSS which had a specificity of 98% and sensitivity of 94% (Beck, C.T. & Gable, 2001b). Though both measures had equivalent specificity indices (ability to correctly identify those with postpartum depression), the PDSS was superior in correctly identifying those who did not have the condition (Beck, C.T. & Gable, 2001b).

Screening offers a first line assessment to elevated postpartum depressive symptoms; however, being identified as symptomatic by way of a psychometrically sound self-report measure is not synonymous with having postpartum depression. The only way to assign a postpartum depression diagnosis is by a structured clinical interview performed by a trained clinician after a positive symptoms screen. Although the prevalence of postpartum depressive

symptoms at three to seven weeks postpartum appears sizeable in the current study, the observed level was congruent with what other researchers observed and reported (Mancini et al. 2007). Nonetheless, the prevalence findings from the current study should be interpreted with caution. The current study relied exclusively on the self-reported method in a convenience sample. While the finding may offer a point prevalence benchmark, it cannot be considered indicative of the level of symptoms in the region or what might be expected for adult Hispanic women, in general.

5.5 STRESS APPRAISAL AND POSTPARTUM DEPRESSIVE SYMPTOMS

The first aim of the current study explored the impact of stress in the third trimester of pregnancy on severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum. Contrary to the study hypothesis that higher levels of stress in pregnancy would significantly predict higher self-reported postpartum depressive symptoms, this study found that stress in pregnancy (PSS) and pregnancy related stress (PRSI) were not significantly associated with self-reported postpartum depressive symptoms at three to seven weeks postpartum. This finding is counter to what Honey et al. (2003) reported for a sample (n=223) of first time British mothers. These researchers found that stress in pregnancy predicted higher self-reported postpartum depressive symptoms; however, stress appraisal focused specifically on childcare issues after delivery. The specific stress type may have allowed women to reflect on specific concerns of neonatal care and wellbeing whereas the current study used a global stress measure (PSS) that potentially allowed respondents to be less focused about their concerns thus creating a situation of under reporting perceived stress.

Though a pregnancy specific stress scale (PRSI) also assessed stress during pregnancy, pregnancy specific stress was also unrelated to self-reported postpartum depressive symptoms. This may be due to the fact participants' pregnancy related stress focused on the physical

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changes due to pregnancy and labile mood in pregnancy, which may have greater relevance to present mood over mood in the future. The observed significant bivariate association between Time 1 BDI-II score and PRSI score ($r = .50$; $p < .01$) demonstrates some support for relevance to the present.

However, two other studies (Gao, Chan, & Mao, 2009; Lueng, Martinson, & Arthur, 2005) exploring the association of perceived stress and postpartum depressive symptoms found that total PSS score predicted higher postpartum depressive symptoms on the EPDS. Gao, Chan, & Mao (2009) found that among first time Chinese mothers and fathers (n=130 parental pairs), total PSS score at 36 weeks gestation (third trimester) significantly predicted six week postpartum depressive symptoms. Similarly, Lueng et al. (2005) found that total PSS score during pregnancy significantly predicted six week postpartum depressive symptoms in a sample (n=385) of Hong Kong Chinese women. These researchers reported that total PSS score along with childcare stress accounted for 18% of the variance in self-reported postpartum depressive symptoms. Both these studies used a prospective design with a convenience sample of minority women dissimilar from the ethnic minority sample of the current study and included a social support measures which the current study did not include. It is possible that responding to questions of social support may have impacted responses to questions about stress which led to the differing results related to stress and postpartum depressive symptoms between these two studies and the current study.

5.6 COPING STRATEGIES AND POSTPARTUM DEPRESSIVE SYMPTOMS

The second aim of the current study examined how coping strategies to stress in pregnancy affected self-reported postpartum depressive symptoms at three to seven weeks postpartum. The current study explored coping strategies from a concurrent situational

perspective. At Time 1 (pregnancy) participants responded to Brief COPE questions using a stem containing "during pregnancy" whereas in the postpartum coping assessment used "since the birth of your baby." Data did not support the hypothesis that the coping strategy used; approach coping and avoidance coping, in the third trimester of pregnancy would significantly predict severity of self-reported postpartum depressive symptoms at three to seven weeks postpartum. The current study found that coping strategy used in pregnancy had little influence on self-reported postpartum depressive symptoms at three to seven weeks postpartum. However, at Time 1, avoidance coping had a positive correlation ($r = .54$) with BDI-II scores (general depression) a finding consistent with what Rudnicki et al. (2001) reported in a study exploring social support and avoidant coping as correlates of depressed mood in pregnancy in a sample (n=150) of lower income minority women of whom 9% were Hispanic.

These researchers used the denial, mental disengagement, and behavioral disengagement subscales of the COPE to operationalize avoidant coping and the Short Form of the Profile of Mood States-Depression Subscale to assess depressive symptoms. Rudnicki et al. 2001 reported avoidant coping was positively correlated with higher depressive symptoms and accounted for 15% of variance in depressed mood. This finding is counter to findings from the current study that show avoidance coping at Time 1 did not have a statistically significant association (b =.13; p=.15) with self-reported postpartum depressive symptoms. A possible explanation for the different findings is how avoidant coping was conceptualized between studies. Avoidance coping in the current study was extracted from the Brief COPE and included denial, disengagement, and substance use; a variant form of what Rudnicki et al. (2001) used as avoidant coping. Also, the two studies used a different number of items to create the avoidant coping scales. Rudnicki et al. (2001) used the long version of the COPE which has 4 questions per subscale resulting in a scale

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with 12 items whereas the current study used the Brief COPE whose subscales are 2 items for a total of 6 questions possibly affecting scale reliability.

A study exploring stress and coping in a sample of first time Australian mothers (n=197) found that after controlling for depressive symptoms in pregnancy women using lower levels of problem focused coping and relying on higher levels of wishful thinking had higher levels of postpartum depressive symptoms on the EPDS (Terry, Mayocchi, & Hynes, 1996). While these researchers conceptualization of coping was not labeled approach and avoidance per se, the associated behavior was congruent to approach and avoidance and convey action or inaction to ameliorate stress. Unlike the current study that assessed stress globally and as pregnancy related stress, Terry et al. (1996) assessed coping effort in response to care of an irritable newborn which may account for the difference between study results. Likewise, Honey & Morgan (2003) found that avoidant coping predicted higher self-reported postpartum depressive symptoms with coping effort directed at childcare stress in a sample of first time British mothers (n=223). These researchers factor analyzed the Brief COPE and returned a four factor solution, one of which was avoidance coping containing the denial and disengagement scales; a slightly different version than avoidance coping in the current study.

Both the Terry et al., (1996) study and the Honey & Morgan (2003) targeted coping effort at a specific infant stressor and found avoidance coping exerted statistically significant influence on self-reported postpartum depressive symptoms assessed using the EPDS. The difference in results among the current study and the above studies may be that the current study assessed coping from a concurrent situational perspective whereas the other studies appear to assess coping effort as a coping style by assigning a specific stressor. This difference may very well account for the disparate results among studies.

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5.7 ACCULTURATION LEVEL AND POSTPARTUM DEPRESSIVE SYMPTOMS

The third aim of the current study looked at the moderating effects of acculturation on the association of stress appraisal in the third trimester of pregnancy and self-reported postpartum depressive symptoms at three to seven weeks postpartum. As hypothesized, lower acculturation level moderated the effect between stress and self-reported depressive symptoms at three to seven weeks postpartum. Compared to participants with higher acculturation levels, the overall model of stress appraisal, approach and avoidance coping strategies, and the control variables general depressive symptoms and years lived in the US accounted for 51% of variance for higher acculturation levels compared to 39% of variance in participants with lower acculturation levels. Lower acculturation levels generally weakened the association between Time 2 stress (PSS) and self-reported depressive symptoms while controlling for Time 1 stress (PSS) though the accompanying change was not statistically significance. While the moderating influence of acculturation is an interesting statistical finding in this study, this finding's practical meaning is far less clear given the homogeneous demographic characteristics of the study participants.

The effects of acculturation on emotional and physical well-being in pregnancy and postpartum is widely reported in the literature (Callister, and Birkhead, 2002; Davila, McFall, and Cheng, 2008). However, the effect of acculturation on emotional health during these periods is equivocal for women of Mexican origin. A two phase study exploring the association between acculturation level and postpartum depressive symptoms (n=377) and DSM-IV depression diagnosis (n=150) among Hispanic women of diverse Hispanic ethnicities, Mexican women reported fewer postpartum depressive symptoms on the PDSS than other Hispanic women in phase one. The researchers concluded that phase one of their study found no consistent association between acculturation level and severity of self-reported postpartum depressive symptoms on the PDSS despite 44% of participants scoring the lowest possible acculturation

level score on the Short Acculturation Scale for Hispanics (Beck, C.T. et at. 2005). Phase two of the study explored the association of acculturation and DSM-IV depression diagnosis which, like phase one, showed acculturation level had no effect on the association between acculturation level and depression diagnosis.

Conversely, Davila et al. (2008) reported higher acculturation level predicted elevated depressive symptoms in a convenience sample of 439 pregnant and postpartum Latina women seeking care in San Antonio, Texas public health clinics. Similarly, Heilemann et al.(2004), in a secondary data analysis of a subsample (n=129) from a cross sectional study (n=315) of women of Mexican descent living in urban northern California and receiving care at one of three community clinics reported a positive association between higher level of acculturation and more self-reported depressive symptoms in both pregnancy and in postpartum.

Acculturation's construct complexities are well documented and debated in the literature (Thomson and Hoffman- Goetz, 2009; Hunt, Schneider, and Comer, 2004). Among these complexities are; lack of construct clarity, an absent unifying theoretically based definition of the construct, the dichotomous notion of cultural opposition; namely cultural change resulting from contact between two differing cultures, acculturation instruments often not being theory based, and absent unambiguous behaviors that concretely represent a behavior change (Thomson, and Hoffman-Goetz, 2009; Hunt, et al. 2004). The ambiguity around acculturation beckons an exploration of the contextual relevance of the acculturation findings from the current study given the geographical location of the US and Mexico border where the study occurred.

El Paso, Texas shares a border with Ciudad Juárez, Chihuahua, Mexico. The two cities are so close in proximity that their downtown areas are within walking distance. Combined, this bi-national metropolitan area is the most populated along the US and Mexico border at just fewer

than 3 million inhabitants with the majority of inhabitants living in Ciudad Juárez (EP Chamber of Commerce). Many area inhabitants commute across the border daily and freely experience life on both sides of the border. Though these cities are situated in two different countries, they are joined historically, economically, ethnically, and socially which create unique circumstances for evaluating the influence of acculturation on persons of this region who may be more similar than dissimilar given the ever present migratory cadence of the region.

To address the methodological critiques offered in the literature regarding acculturation measures, this study used the multidimensional and theoretically based Acculturation Rating Scale for Mexican Americans-II (ARSMA-II) (Cuellar, et al., 1995; Thomson, and Hoffman-Goetz, 2009). The ARSMA-II has the ability to classify persons on a continuum as either Anglo or Mexican orientation based on a linear score. The measure seemed ideal for assessing influences of acculturation given the context of the study's geographical location. Data analysis revealed that approximately three-quarters of study participants were bicultural who scored as either Mexican oriented to approximately balanced bicultural (35.7%) and slightly Anglo oriented bicultural (38%). This finding may suggest that for young adult females the mainstream culture on this segment of the US and Mexico border may be more blended than the dichotomous traditional view of acculturation which posits the presence of two distinct cultures. This more blended culture also illustrates the assessment challenge of differentiating concrete acculturative behavior among participants when the vast majority was categorically similar based on ARSMA-II liner scores.

Given the dynamic nature of this segment of the US and Mexico border assessing acculturation in this geographical area may need to be more nuanced than most instruments currently available and explore attitudes, beliefs, and values about the phenomenon being

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researched (Thomson, and Hoffman-Goetz, 2009) to better understand what behavior is chosen or rejected and how these choices affect health outcomes. This expanded assessment might offer additional insight into the influences of the acculturative process especially when exploring the construct among younger persons living in the region.

Clearly acculturation moderated the effects of stress on self-reported postpartum depressive symptoms in the current study; however, the mechanism by which this occurred is unclear. Study data need additional analyses to begin elucidating the potential influences acculturation had as a moderator.

5.8 TRANSACTIONAL MODEL OF STRESS AND COPING AND POSTPARTUM DEPRESSIVE SYMPTOMS

The final study aim explored a comprehensive stress and coping model guided by Lazarus and Folkman's Transactional Model of Stress and Coping (Lazarus & Folkman, 1984). Lazarus and Folkman's model is predicated on the belief that persons interact with their environment and constantly evaluate situational demands and decide whether the situation at hand is taxing or not. The intervening mechanism in this model is appraisal. When faced with situational demands evaluated as exceeding one's capability to manage the demands, a stress appraisal-coping strategy cascade is activated to ameliorate the stress ultimately resulting in an emotional outcome that positively or negatively impacts emotional and physical well-being.

Pregnancy and childbirth can be viewed as circumstances with unique situational demands that require women to appraise the extent demands tax well being, to activate coping strategies to address those demands all of which results in an emotional outcome that either promotes or impedes well-being. Thus, this period of a woman's life may follow the tenets of Lazarus and Folkman's model. However, little is known about how the stress appraisal-coping

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cascade impacts severity of postpartum depressive symptoms in women from a point in pregnancy to the postpartum period.

Initially, the current study explicitly identified three aims; two of which focused on the third trimester, and one on the moderating effects of acculturation on stress and postpartum depressive symptoms. This narrow focus though did little to reveal the transactional nature of this period in a woman's life so a post-hoc aim explored a comprehensive model predicting postpartum depressive symptoms at three to seven weeks postpartum using repeated measures of stress, coping strategies and general depressive symptoms while controlling for Time 1 of these constructs and select covariates.

Data from this study showed good fit for the recursive model shown in Figure 5.1 and may suggest support for Lazarus and Folkman's Transaction model of stress and coping in pregnancy and postpartum in this community sample of adult women of Mexican origin living on the US and Mexico border. The overall model assessed how Time 2 stress (PSS) and coping strategies (approach coping and avoidance coping) impacted an emotional outcome; self-reported postpartum depressive symptoms at three to seven weeks postpartum while controlling for corresponding Time 1 variable, general depressive symptoms (BDI-II), and covariates. The model accounted for 43% of the variance in self-reported postpartum depressive symptoms at three to seven weeks postpartum. All direct paths in this model were statistically significant.

Additionally, all the repeated measures of interest changed (drop in score) from Time 1 to Time 2 demonstrating support for a transactional response to an event. The effect sizes from Time 1 to Time 2 for stress (PSS score) was $d = 0.42$; a small to approaching medium sized change, approach coping (Brief COPE) was $d = 0.64$; a medium sized change, avoidance coping (Brief COPE) was $d = 0.28$; a small sized change, and the control variable of general depression

symptoms (BDI-II score) was $d = 0.82$; a large sized change. The drop in both PSS score and coping strategy scores may be suggestive of an ongoing adaptation process. Though, the drop in BDI-II scores was consistent with a large effect size change, the range of score includes two high end outliers; a score of 30 and 32.

Though the overall data fit and Time 1 to Time 2 statistically significant changes suggest support for a transactional model of stress and coping, this finding should be interpreted with caution. This was a convenience sample therefore causality cannot be determined even using a prospective, repeated measure, proxy pretest design. Secondly, the current study used only self-reported measures. This is not to suggest that self-reported method is substandard to other methods, but to raise the issue that corroboration by another method such as direct observation, key informant feedback, or in the case of depressive symptoms; a structured clinical interview would reinforce support for the model. Lastly, only one other study with similar design features using Lazarus and Folkman's model (Honey and Morgan, 2003) was located in the literature. As with the current study, Honey & Morgan (2003) reported support for a transactional model.

5.9 STUDY STRENGTHS

This study has several strengths. First, it is distinctive in that one other similar study appears in the literature. Second, the prospective, proxy pretest, repeated measures design of the study offered better understanding of how postpartum depressive symptoms are affected by stress and coping strategies by controlling for variables in pregnancy and observing change over time. Third, the study included participants from an under-represented group that is also the fastest growing minority. Finally, there was only a 4.4% attrition rate among participants.

5.10 STUDY LIMITATIONS

This study had several study limitations. Limitations included the sampling technique, the data collection method, sample homogeneity, and instrumentation; all of which could be threats to either internal or external study validity.

First, this study used a community sample drawn by convenience from a two-physician practice with two locations. While the two locations were in distinctly different parts of the community, it cannot be assumed that the sample is wholly representative of the women of Mexican origin living in the community. Thus, lack of random selection is a threat to the external validity of this study. Although all efforts were made to strengthen study design with design features such as a prospective approach to explore the constructs of interest, repeated measures with a proxy pretest, study results should be generalized with caution given the convenience sampling technique used.

A second limitation of this study is the mono-method bias used for data collection. Self-report was the only reporting method used to evaluate the constructs of interest in this study and some degree of the associations among the measures may be due to common method variance. Given that depressive symptoms were measured solely using self-report it is possible that participants under reported symptoms to avoid stigma often associated with mental health diagnosis.

Lastly, the analytic method used for exploring the moderating effects of acculturation on the overall stress and coping model in this study may have been underpowered thus leading to issues with statistical conclusion validity (Shadish et al. 2002). The need to divide the sample into two smaller groups for the constrained and unconstrained path model analysis for the moderating effect of acculturation may have limited the ability to fully assess statistical co-variation because of decreased power. While two statistical significantly paths were found, the

two smaller groups may have lacked the necessary power to detect other significant paths in this study's highly homogenous sample because effects were very small and non detectable with the small two group samples.

5.11 DIRECTION FOR FUTURE RESEARCH

The current study provides groundwork for future studies exploring depressive symptom during the perinatal period among women of Mexican origin. It is recommended that future studies assess depressive symptoms using both a self-report measure and a structured clinical interview, when possible, to disentangle symptoms that follow the trajectory of mood disorder and symptoms that are consistent with normal changes in pregnancy and postpartum.

A lack of understanding exists in knowing which self-report depression measure best assesses symptoms. Parallel testing the most widely used scales could be a first step in filling this gap. The knowledge gained from these studies could be used to carry out multisite studies designed to begin addressing the measurement conundrum presented in the discussion section.

Though the influence of acculturation had a moderating effect on study results, the mechanism by which this happened is unclear. Like self-reported depressive symptoms assessment, acculturation assessment is filled with methodological issues detailed in the discussion section. The acculturation orientation of the current study participants suggests it may be necessary to re-examine the usefulness of the traditional view of acculturation as an explanatory variable when exploring its effects on health in young adults living on the US and Mexico border. A first step to understanding acculturation in this region might be to use mixed method design to learn more about beliefs, values and norms that drive decisions to retain or shed behavior viewed as "traditional" that could affect health beliefs and health promotion habits.

Pregnancy intention and pregnancy planning rates though consistent with national and state trends raise concern. It is suggested these constructs be explored further in this region using an interdisciplinary research team and mixed method design to gain a better understanding of the meaning of pregnancy intention and planning a pregnancy in the region. Often, pregnancy intention and pregnancy planning are compartmentalized into contraceptive and family planning issues when in fact; these constructs may include a broader range of issues and social construction for women in the region.

5.12 SUMMARY AND CONCLUSIONS

The current study explored postpartum depressive symptoms in adult women of Mexican origin by including socio-behavioral constructs to address a clinical topic in a sample of women from an underrepresented group in research. Although the results failed to support that stress in pregnancy and that coping strategies in pregnancy would significantly predict self-reported postpartum depressive symptoms at three to seven weeks postpartum, the study revealed other notable findings with important clinical implications. As with prior studies, depressive symptoms in pregnancy significantly predicted self-reported postpartum depressive symptoms at three to seven weeks postpartum even when controlling for those pregnancy symptoms. This finding affirms the consistency by which pregnant women may be affected by depressive symptoms (Bennett et al. 2004) and the under detection of the symptoms during pregnancy. The finding may also lend some support for further evaluating the benefits of screening for depressive symptoms in pregnancy to identify women who may be at risk for developing postpartum depressive symptoms and begin providing supportive care earlier. This evaluation could be conducted using a randomized clinical control comparison of early screening compared to usual care across the perinatal period.

The point prevalence for self-reported postpartum depressive symptoms at three to seven weeks postpartum trended with prior research findings with the positive probable postpartum depression prevalence of 12.4% approximating O'Hara and Swain (1996) reported meta analytic rate for the diagnosis of postpartum depression. While unplanned and unintended pregnancies were not significantly associated with self-reported postpartum depressive symptoms in the current study, their prevalence has public health implications. Though this study did not assess reproductive health issues and it used a convenience sample versus a probability sample, the proportion of unplanned (58.9%) and unintended (52%) among study participants were congruent with prior national studies (Finer and Zolna, 2011; Finer and Henshaw, 2006). The rates observed for both unplanned and unintended in the current study raise the question for the need of a comprehensive assessment of reproductive health related to pregnancy intention and planning in women living on the US and Mexico border.

Acculturation findings in this study offered an interesting view of the construct given the majority of participants scored bicultural on the ARSMA-II. While not surprising given the contextual nature of the geographical location, this finding raised the question of the need for more nuanced acculturation measures for use along the US and Mexico border, where younger inhabitants on either side of the border may be more similar than dissimilar.

References

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders (4th Ed.) Text Revision*. Arlington, VA: American Psychiatric Publishing, Inc.

Baker, L. & Oswalt, K. (2008). Screening for postpartum depression in a rural community. *Community Mental Health Journal, 44*, 171-180.

Baker, L., Cross, S., Greaver, L., Wei, G., Lewis, R. (2005). Prevalence of postpartum depression in Native American population. *Maternal and Child Health Journal, 9*, 21-25.

Beck, A.T., Steer, R.A. & Brown, G.K. (1996). *Manual for the Beck Depression Inventory – II (BDI-II) Manual*. San Antonio, TX: Pearson.

Beck, C.T. (1996). A meta-analysis of predictors of postpartum depression. *Nursing Research*, 45, 297-303.

Beck, C.T. (2001). Predictors of postpartum depression: an update. *Nursing Research, 50*, 275-285.

Beck, C.T., & Gable, R.K. (2000). Postpartum depression screening scale: Development and psychometric testing. *Nursing Research*, 49, 272-282.

Beck, C.T., Gable, R.K. (2001a).Further validation of the postpartum depression screening scale. *Nursing Research, 50*,155-164.

Beck, C.T., & Gable, R.K. (2001b). Comparative analysis of the performance of the postpartum depression screening scale with two other depression instruments. *Nursing Research, 50*: 242-250.

Beck, C.T., & Gable, R.K. (2002). *Postpartum Depression Screening Scale Manual.* Los Angeles: Western Psychological Services.

Beck, C.T., & Gable, R.K. (2003). Postpartum Depression Screening Scale: Spanish version. *Nursing Research, 52*, 296-306.

Beck, C.T., & Gable, R.K. (2005). Screening performance of the Postpartum Depression Screening Scale – Spanish version. *Journal of Transcultural Nursing, 16*, 331-338.

Beck, C.T., Froman, R.D. & Bernal, H. (2005). Acculturation level and postpartum depression in Hispanic mothers. *Maternal Child Nursing, 30*, 299-304.

Beck, C.T. (2006). Acculturation: Implications for perinatal research. *Maternal Child Nursing, 31*,114-128.

Bennett, H.A., Einarson, A., Taddio, A., Koren, G., & Einarson, T.R. (2004). Prevalence of depression during pregnancy: Systematic review. *Obstetrics and Gynecology, 103*: 698-709.

Berry, J.W. (1997). Immigration, acculturation and adaptation. *Applied Psychology: An International Review, 46*, 5-68.

Brennan, P.L., Holand, J.M., Schutte, K.K., & Moos, R.H. (2012). Coping trajectories in later life: A 20-year predictive study. *Aging & Mental Health, 16*: 305-316.

Callister, L.C., & Birkhead, A. (2002). Acculturation and perinatal outcomes in Mexican immigrant childbearing women: An integrative review. *Journal of Perinatal and Neonatal Nursing, 16*(3), 22-38.

Carmody, D.P. (2005). Psychometric characteristics of the Beck Depression Inventory-II with college student of diverse ethnicity. *International Journal of Psychiatric Clinical Practice*, 9, 22-28.

Carver, C.S., Scheirer, M.F., & Weintraub, J.K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267-283.

Carver, C.S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine,* 4, 92-100.

Carver, C.S. Brief Cope (English and Spanish versions). Retrieved November 17, 2008 from http://www.psy.miami.edu/faculty/ccarver/sclspan.html

Clark, L. (2001). La familia: Methodological issues in the assessment of perinatal social support for Mexicans living in the United States. *Social Science Medicine,* 53,1303-1320.

Cohen, J. (1992). Quantitative methods in psychology: A power primer. *Psychology Bulletin*, 112, 155-159.

Cohen, S., & Williamson, G.M., (1988). Perceived stress in a probability sample of the United States. In S. Spaceapan & S. Oskamp (Eds.). *The social psychology of health* (pp. *31-67).* Newbury Park, CA: Sage.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24* (December), 385-396.

Cuellar, I., & Roberts, R.E. (1997). Relations of depression, acculturation and socioeconomic status in a Latino sample. *Hispanic Journal of Behavioral Science,* 19 (2), 230-238.

Cuellar, I., Arnold, B., & Maldonado, R. (1995). Acculturation Rating Scale for Mexican Americans-II: A revision of the original ARSMA Scale. *Hispanic Journal of Behavioral Science,* 17, 275-304.

Davila, M., McFall, S.L., & Cheng, D (2009). Acculturation and depressive symptoms among pregnant and postpartum Latinas. *Maternal Child Health Journal,* 13, 318-325.

Diaz, M.A., Huynh-Nhu, L. Cooper, B.A., & Muñoz, R.F. (2007). Interpersonal factors and perinatal depressive symptomatology in a low-income Latina sample. *Cultural Diversity and Ethnic Minority Psychology,* 13(4): 328-36.

Dozois, D.J.A., Dobson, K.S., & Ahnberg, J.S. (1998). A psychometric evaluation of the Beck Depression Inventory – II. *Psychological Assessment,`*10(2): 83-89.

Farley, T., Galves, A., Dickinson, L.M., & de Jesus Diaz Perez, M (2005). Stress, coping and health: a comparison of Mexican immigrants, Mexican-Americans, and non-Hispanic Whites*. Journal of Immigrant Health*, 7(3): 213-220.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Finer, L.B., & Henshaw, K. (2006). Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. *Perspectives on Sexual and Reproductive Health,* 90-96.

Finer, L.B., & Zolna, M.R. (2011). Unintended pregnancy in the United States: Incidence and disparities, 2006. *Contraception,* 84(5), 478-485.

Folkman, S., Lazarus, R.S., Dunkel-Schetter, C., DeLongis, A., & Guren, R.J. (1986). Dynamics of a stressful encounter: cognitive appraisal, coping and encounter outcomes. *Journal of Personality and Social Psychology,* 50:992-1003.

Flynn, H.A. (2005). Epidemiology and phenomenology of postpartum mood disorder. *Psychiatric Annals,* 35(7), 544-551.

Gao, L., Chan, S.W., & Mao, Q. (2009). Depression, perceived stress, and social support among first-time Chinese mothers and Fathers in the postpartum period. *Research in Nursing &Health,* 32, 50-58.

Gavin, N.I., Gaynes, B.N., Lohr, K.N., Meltzer-Brody, S., Garlehner, G., & Swinson, T. (2005). Perinatal depression: A systematic review of prevalence and incidence. *Obstetrics and Gynecology,* 106(5) part 1, 1071-1083.

Glanz, K., & Schwartz, M.D. (2008). Stress, coping and health behavior. In Glanz, K., Rimer, B.K., Viswanath, K (Eds.), *Health Behavior and Health Education Theory, Research and Practice, 4th ed. (*pp. 211-236*)*. San Francisco: Jossey-Bass.

Greater El Paso Chamber of Commerce. About El Paso. http://www.elpaso.org/page.php?id=34 Retrieved May 26, 2013.

Grigoriadis, S., Roman, S. (2006). Postpartum psychiatric disorders: What do we know and where do we go? *Current Psychiatry Reviews,* 2, 151-158.

Gotlib, I.H., Wiffen, V.E., & Wallace, P.M. (1991). Prospective investigation of postpartum depression: Factors involved in onset and recovery. *Journal of Abnormal Psychology,* 2, 122-132.

Hawkins, M., DiPietro, J.A., & Costigan, K.A.(1999). Social class differences in maternal stress appraisal during pregnancy. *Annual New York Academy of Science*, Dec. 1999: 896: 439-441.

Heileman, M.V., Coffey-Love, M., & Frutos, L. (2004). Perceived reasons for depression among low income women of Mexican descent. *Archives of Psychiatric Nursing,* 18(5), 185-92.

Honey, K.L., Morgan, M., & Bennett, P. (2003). A stress-coping transactional model of low mood following childbirth. *Journal of Reproductive Infant Psychology,* 21(2): 129- 143.

Howell, E.A., Mora, P., & Leventhal, H. (2006). Correlate of early postpartum depression symptoms. *Maternal and Child Health Journal,* 2, 149-157.

Howell, E.A., Mora, P., Horowitz, C.R., & Leventhal, H. (2005). Racial and ethnic differences in factors associated with early postpartum depressive symptoms. *Obstetrics & Gynecology,* 6, 14421450.

Hunt, L.M., Schneider, S., Comer, B. (2004). Should "acculturation" be a variable in health research? A critical review of research on US Hispanics. *Social Science & Medicine,* 59, 973-986.

Karno, M., Hough, R.L., Burnam, A., Escobar, J.I., Timbers, D.M., Santana, F., & Boyd, J.H. (1987). Lifetime prevalence of specific psychiatric disorders among Mexican Americans and non-Hispanic Whites in Los Angeles. *Archive of General Psychiatry,* 44: 695-701.

Kessler, R.C., Chiu, W.T., Demler, O., Walters, E.E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archive of General Psychiatry,* 62: 617- 627,768.

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R., & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. *Archive of General Psychiatry,* 62(6), 593-602,768.

Kuo, W.H., Wilson, T.E., Holman, S., Holman, S., Fuentes-Afflick, E., O'Sullivan, M.J., & Minkoff, H. (2004). Depressive symptoms in the immediate postpartum period among Hispanic women in three U.S. cities. *Journal of Immigrant Health*, 6(4): 145-153

Lancaster, C.A., Gold, K.J., Flynn, H.A., Yoo, H., Marcus, S.M., & Davis, M.M. (2010). Risk factors for depressive symptoms during pregnancy: a systematic review. *American Journal of Obstetrics & Gynecology,* 202, 5-14.

Lazarus, R.S. (1999). *A New Synthesis: Stress and Emotion.* New York: Spring Publishing Company.

Lazarus, R.S., Folkman, S. (1984). *Stress Appraisal, and Coping.* New York: Spring Publishing Company.

Lechuga, J. (2008). Is acculturation a dynamic construct? The influence of method of priming culture on acculturation. *Hispanic Journal of Behavioral Sciences, 30,* 324-339.

Leung, S.S.K., Martinson, I.M., & Arthur, D. (2005). Postpartum depression and related psychosocial variables in Hong Kong Chinese women: Findings from a prospective study. *Research in Nursing & Health, 28,* 27-38.

Levy-Shiff, R., Dimitrovsky, L., Shulman, S., & Har-Even, D. (1998). Cognitive appraisals, coping strategies and support resources as correlates of parenting and infant development. *Development Psychology, 34:* 1417-1427

Mancini, F., Carlson, C., & Albers, L. (2007). Use of the Postpartum Depression Screening Scale in a collaborative obstetric practice. *Journal of Midwifery & Women's Health, 52,* 429-434.

Martinez-Schallmoser, L., Telleen, S., & MacMullen, N.J. (2003). The effect of social support and acculturation on postpartum depression in Mexican American women. *Journal of Transcultural Nursing. 14:* 329-338.

Ngugen, H.T., Clark, M., & Ruiz, J.R. (2007). Effects of acculturation on the reporting of depressive symptoms among pregnant women. *Nursing Research, 56,* 217-223.

O'Hara, M.W., & Swain, A.M. (1996). Rates and risk of postpartum depression: a meta-analysis. *International Review of Psychiatry*, 8(1): 37-54.

Penley, J.A., Wiebe, J.S., & Nwosu, A. (2003). Psychometric properties of the Spanish Beck Depression Inventory – II in a medical sample. *Psychological Assessment*, 15(4): 569-577.

Perczek, R., Carver, C.S., Price, A.A., & Pozo-Kaderman, C. (2000). Coping, mood, and aspects of personality in Spanish translation and evidence of convergence with English versions. *Journal of Personality Assessment, 74,* 63-87.

Ramirez-Gonzalez, M.T., & Hernandez, R.L. (2007). Factor structure of the Perceived Stress Scale (PSS) in a sample from Mexico. *Spanish Journal of Psychology*, 10, 199-206.

Rich-Edwards, J.W., Kleinman, K., Abrams, A., Harlow, B.L., McLaughlin, T. J., Joffe, H., & Gillman, M.W. (2006). *Journal of Epidemiology and Community Health, 60,* 221-227.

Rudnicki, S.R., Graham, J.L., Habboushe, D.F., & Ross, R.D. (2001). Social support and avoidant coping: Correlates of depressed mood during pregnancy in minority women. *Women & Health, 34*(3):19-34.

Ruiz, R.J., Fullerton, J., Guerrero, L.C., Garcia-Atwater, M., & Dolbier, C.L. (2006). Development of a culturally sensitive stress instrument for pregnant Hispanic women. *Hispanic Health Care International, 4,* 27-35.

Rychnovsky, J., & Beck, C.T. (2006). Screening for postpartum depression in military women with the Postpartum Depression Screening Scale, *Military Medicine, 11,* 1100-1104.

Sam, D.L. (2006). Acculturation: conceptual background and core components. In D.L. Sam & J.W. Berry (Eds.), *The Cambridge Handbook of Acculturation Psychology* (pp. 11-26). Cambridge, UK: Cambridge University Press.

Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference.* Boston: Houghton Mifflin Company.

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics (5th ed.).* Boston: Pearson.

Terry, K.J., Mayocchi, L., & Hynes, G.J. (1996). Depressive symptomatology in new mothers: A stress and coping perspective. *Journal of Abnormal Psychology, 105,* 220-231.

Texas Department of State Health Services, Division of Family and Community Health Services. (2009) Annual Report: Pregnancy Risk Assessment Monitoring System (PRAMS). Retrieved from http://www.dshs.state.tx.us/mch/#PRAMS2 July 2, 2013.

Thomson, M.D., & Hoffman-Goetz, L. (2009). Defining and measuring acculturation: A systematic review of public health studies with Hispanic populations in the United States. *Social Science &Medicine,* 69, 983-991.

U.S. Department of Commerce Economic and Statistics Administration; Bureau of the Census. Current population reports: Population projections of the United States by age, sex, race and Hispanic origin: 1995-2050 (P25-1130). Retrieved from http://www.census.gov/prod/1/pop/p25-1130.pdf   March 21, 2008.

U.S. Department of Commerce; United States Census Bureau. State and county quick facts. Retrieved from http://quickfacts.census.gov/qfd/states/48/4824000.html June 15, 2013.

VanVoorhis, C.R., & Blumentritt, T.L.(2007). Psychometric properties of the Beck Depression Inventory-II in a clinically-identified sample of Mexican American adolescents. *Journal of Child and Family Studies,* 16, 789-798.

Wei, G., Greaver, L.B., Marson, S.M., Herndon, C.H., Rogers, J (2008). Postpartum depression: Racial differences and ethnic disparities in a tri-racial and bi-ethnic population, *Maternal Child Health Journal,* 12, 699-707.

Wiebe, J.S., & Penley, J.A. (2005). A psychometric comparison of the Beck Depression Inventory – II in English and Spanish. *Psychological Assessment*, 17, 481-485.

Appendix A: English Informed Consent

University of Texas at El Paso (UTEP) Institutional Review Board
Informed Consent Form for Research Involving Human Subjects

Protocol Title: The Effects of Stress, Coping and Acculturation on Postpartum Depression Symptoms in Women of Mexican Origin

Principal Investigator: Rena DiGregorio, PhD(c), RN

Main Advisor: Robert L. Anders, DrPH, APRN, CNNA, FAAN

UTEP: College of Health Sciences and School of Nursing

1. Introduction

You are being asked to take part voluntarily in the research project described below. Please take your time making a decision and feel free to discuss it with your friends and family. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study. Please ask the study researcher or the study staff to explain any words or information that you do not clearly understand*.*

2. Why is this study being done?

You have been asked to take part in a research study to learn more about how Mexican women deal with stress during pregnancy and after delivery. The study will help us learn how stress affects depression symptoms during pregnancy and after delivery in Mexican women.

Approximately, 135 Mexican women, will be enrolling in this study to take place in El Paso, Texas. Four obstetrics and gynecology private practices will participate in this study with approximately 34 women coming from each practice.

You are being asked to be in the study because you state you are Mexican women between the age of 18 and 40, in your third trimester of pregnancy (28 to 40 weeks pregnant), have an uncomplicated pregnancy, and are able to read and write in either English or Spanish.

If you decide to enroll in this study, your total involvement will be approximately 12 weeks.

3. What is involved in the study?

If you agree to take part in this study, the research team will:
- Explain the study
- Check to see if you are able to be in the study
- Get your permission to be in the study
- You will fill out questionnaires during pregnancy and three to seven weeks after delivery

www.manaraa.com

- You will fill out six questionnaires about yourself given by the researcher or research assistant during pregnancy
- You will fill out four questionnaires about yourself given by the researcher or research assistant three to seven weeks after you delivery your baby
- All this will be done in your doctor's office either before or after seeing your doctor during a scheduled appointment during your pregnancy and one after you deliver.

4. What are the risks and discomforts of the study?

There are no known risks associated with this research to either you or your baby.
It is possible you may become tired, nervous or sad when you fill out the questionnaires.

5. What will happen if I am injured in this study?

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to Rena DiGregorio (915-240-4794) and to the UTEP Institutional Review Board (IRB) at (915-747-8841) or irb.orsp@utep.edu.

6. Are there benefits to taking part in this study?

There will be no direct benefits to you or your baby for taking part in this study. This research may help us to understand how stress and how dealing with stress during pregnancy and after delivery affects depression symptoms after delivery.

7. What other options are there?

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

8. Who is paying for this study?

This study is not funded by UTEP or any sponsors outside of UTEP.

9. What are my costs?

There are no direct costs for participating in this study. You will be responsible for travel to and from the research site, and any other incidental expenses.

10. Will I be paid to participate in this study?

You will be given a total of $45.00 in gift cards for your participation. You will receive one $20.00 gift card after completing the six (6) questionnaires during pregnancy and another $25.00 gift card when completing the five (4) questionnaires three to seven weeks after delivery.

11. What if I want to withdraw or am asked to withdraw from this study?

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you do not take part in the study, there will be no penalty.

If you choose to take part, you have the right to stop at any time. However, we encourage you to talk to a member of the research group so that they know why you are leaving the study. If there are any new findings during the study that may affect whether you want to continue to take part, you will be told about them.

The researcher may decide to stop your participation without your permission, if he or she thinks that being in the study may cause you harm, or if you are not able to complete the questionnaires.

12. Who do I call if I have questions or problems?

You may ask any questions you have now. If you have questions later, you may call Rena DiGregorio at (915-240-4794) or rmdigregorio@miners.utep.edu.

If you have questions or concerns about your participation as a research subject, please contact the UTEP Institutional Review Board (IRB) at (915-747-8841) or irb.orsp@utep.edu.

13. What about confidentiality?

- Your part in this study is confidential. None of the information will identify you by name. All records will be kept in a locked cabinet in UTEP's College of Health Science and only Ms. DiGregorio and her advisor; Dr. Anders will have access to the information.

- Every effort will be made to keep your information confidential. Your personal information may be disclosed if required by law. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include, but are not necessarily limited to:
- The United States Department of Health and Human Services (DHHS)
- UTEP Institutional Review Board

- Because of the need to release information to these parties, absolute confidentiality cannot be guaranteed.

- The results of this research study may be presented at meetings or in publications; however, your identity will not be disclosed in those presentations.

14. Mandatory reporting

If during the study, information is revealed about potentially dangerous current or future behavior towards you or others, the law requires that this information be reported to the proper authorities.

15. Authorization Statement

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information on results of the study later if I wish.

Participant Name: _____ Date: _____

Participant Signature: _____ Time: _____

Consent form explained/witnessed by: _____
<div align="center">Signature</div>

Printed name: _____

Date: _____ Time: _____

Appendix B: Spanish Informed Consent

La Universidad de Tejas en El Paso (UTEP) Comité Examinador Institucional
Forma de Consentimiento Informado para Investigación que Incluye Seres Humanos

Título de protocolo: Los efectos del estrés, el manejo del estrés y aculturación a los síntomas de depresión en el post parto en las mujeres de origen mexicano

Investigador Principal: Rena DiGregorio, PhD(c), RN

                            Consejero principal: Robert L. Anders, DrPH, APRN, CNNA, FAAN

UTEP: Colegio de Ciencias de Salud

1. Introducción

Le estamos pidiendo participar voluntariamente en este proyecto de investigación. Por favor, tomé todo el tiempo necesario para llegar a una decisión y siéntase libre de hablar con sus amigos y familiares acerca de esto. Antes de que acepte participar en este estudio de investigación, es importante que usted lea esta forma de consentimiento que describe el estudio. Pida por favor que el investigador del estudio o su personal le expliquen cualquier palabra o información que no entienda claramente.

2. ¿Por qué se está haciendo este estudio?

Le pedimos su participación en un estudio de investigación para aprender más acerca de cómo las mujeres mexicanas lidian con el estrés durante el embarazo y después del parto. El estudio nos ayudará a aprender cómo el estrés afecta los síntomas de depresión durante el embarazo y después del parto en las mujeres mexicanas.
Aproximadamente, 135 mujeres adultas de origen mexicano, participaran en este estudio en El Paso, Tejas. Cuatro oficinas privadas de obstetricia y ginecología participarán en este estudio con aproximadamente 34 mujeres de cada práctica.

Le estamos pidiendo su participación en el estudio porque usted afirma que es mujer de origen mexicano entre la edad de 18 y 40 años, en el tercer trimestre de embarazo (28 a 40 semanas de embarazadas), tiene un embarazo sin complicaciones y es capaz de leer y escribir en inglés o en español.

Si decide inscribirse en este estudio, la duración de su participación en este estudio es aproximadamente doce (12) semanas.

3. ¿Qué está involucrado en el estudio?

Si usted está de acuerdo a participar en este estudio, el equipo de investigación revisara lo siguiente con usted:

- Explicar el estudio
- Revisar si usted puede participar en el estudio
- Obtener su permiso de participación en el estudio
- El investigador o su asistente le darán para que complete cuestionarios acerca de usted.
  - ✦ Seis (6) cuestionarios durante el embarazo
  - ✦ Cuatro (4) cuestionarios de tres a siete semanas después su parto
- Todo esto se hará en la oficina de su médico durante una cita programada antes o después de ver a su médico. El estudio no va a requerir que usted haga citas adicionales a su médico.

4. ¿Cuáles son los riesgos y molestias del estudio?

No hay riesgos asociados con esta investigación para usted o su bebé. Es posible que usted pueda cansarse o ponerse nerviosa o triste al llenar los cuestionarios.

5. ¿Qué sucederá si este estudio me causa daño?

La Universidad de Tejas en El Paso y sus afiliadas no ofrecen pagar o cubrir el costo de tratamiento médico para la enfermedad o lesión relacionada con la investigación. No se ha preparado ningún fondo para pagar o reembolsarle en caso de lesión o enfermedad. Usted no cederá ninguno de sus derechos legales firmando esta forma de consentimiento. Usted debe reportar cualquier lesión a Sra. Rena DiGregorio al 915-240-4794 y al comité examinador institucional (IRB) de UTEP al 915-747-8841 o por correo electrónico al irb.orsp@utep.edu.

6. ¿Existen ventajas por la participación en este estudio?

No habrá ningún beneficio directo para usted o para su bebé por participar en este estudio. Esta investigación puede ayudar los profesionales de la salud a entender mejor los efectos de estrés, el manejo del estrés y los síntomas de depresión durante el embarazo y post parto en las mujeres de origen mexicano.

7. ¿Cuáles son mis opciones?

Usted tiene la opción de no participar en este estudio. No habrá ningún castigo o repercusiones si usted decide no participar en este estudio.

8. ¿Quién está pagando para este estudio?

Este estudio no está financiado por UTEP o cualquier patrocinador fuera de UTEP.

9. ¿Cuáles son mis costos de participar?

No hay ningún costo para usted en participar en este estudio. Usted será responsable de llegar a sus citas con su médico ya que es en la oficina donde se conducirá la investigación y por cualquier otro costo fuera del estudio.

10. ¿Me pagarán para participar en este estudio?

Se le dará un total de $ 45.00 dólares en tarjetas de regalo por su participación. Usted recibirá una tarjeta de regalo de $ 20.00 dólares después de completar los seis (6) cuestionarios durante el embarazo y otra tarjeta de regalo de $ 25.00 dólares al completar los cuatro (4) cuestionarios de tres a siete semanas después del parto.

11. ¿Qué si quiero retirarme o se me piden retirarme de este estudio?

Su participación en este estudio es voluntaria. Usted tiene el derecho a elegir no participar en este estudio. Si usted decide no participar, no habrá ningún castigo.

Si decide participar, usted tiene derecho de retirarse del estudio en cualquier momento. Sin embargo, le pedimos y animamos a que hable con un miembro del grupo de investigación para que sepan por qué usted está dejando el estudio. Si hay algunos nuevos detalles durante el estudio que pueden afectar su decisión de participación, se le harán saber.

El investigador puede pedirle que se retire del estudio sin su permiso, si él o ella piensa que estar en el estudio puede hacerle daño, o si no puede terminar los cuestionarios.

12. ¿Quién llamo si tengo preguntas o problemas?

Usted puede hacer cualquier pregunta que tenga ahorita. Si tiene preguntas más tarde, puede llamar a Rena DiGregorio al 915-240-4794 o por correo electrónico a rmdigregorio@miners.utep.edu Si usted tiene preguntas o preocupaciones acerca de su participación en este estudio, por favor contacte al comité examinador institucional de UTEP (IRB) por teléfono al 915-747-8841 o por correo electrónico al irb.orsp@utep.edu.

13. ¿Cómo se mantendrá la confidencialidad?

a.   Su participación en este estudio es confidencial. Ninguna de la información le identificara por su nombre. Todos los expedientes serán mantenidos en un gabinete seguro en el Colegio de Ciencias del UTEP. Solamente la Sra. DiGregorio y su consejero tendrán acceso a la información.

b.   Se hará todo lo posible para mantener su información confidencial. Su información personal puede ser revelada si es requerido por la ley. Las organizaciones que podrán inspeccionar o copiar sus registros de investigación para el análisis de datos y de aseguramiento de calidad incluyen, pero no están necesariamente limitadas a:

- El Departamento de Salud y Servicios Humanos (DHHS) de los Estados Unidos
- Comité Examinador Institucional Forma Informada del Consentimiento para la Investigación que Incluye Seres Humanos de UTEP

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Debido a la necesidad de liberar información a estas partes, no se le garantiza la absoluta confidencialidad.

c. Los resultados de este estudio de investigación pueden ser presentados en reuniones o se podrían publicar en periódicos profesionales; su identidad no será divulgada en estas presentaciones.

14. Reporte obligatorio de informes

Si durante el estudio, se revela información sobre el comportamiento actual o futuro potencialmente peligroso hacia usted u otras personas, la ley requiere que esta información sea divulgada a las autoridades apropiadas.

15. Declaración de la autorización

He leído cada página de este consentimiento sobre el estudio (o se me leyó). Sé que participar en este estudio es voluntario y he elegido estar en este estudio. Sé que puedo parar mi participación en este estudio sin ningún castigo. Se me dará copia de esta forma de consentimiento y si deseo puedo conseguir los resultados del estudio más tarde.

Nombre impreso del participante: _____Fecha: _____

Firma del participante: _____ Hora: _____

Firma del consentimiento explicada por/atestiguada por:

_____ (Firma)

Nombre impreso de firma: _____

Fecha: _____ Hora: _____

Appendix C: Counseling and Psychotherapy Services

CRISIS INTERVENTION

El Paso Community Mental Health Mental Retardation (MHMR)
1600 Montana
24 Hour Crisis Line 779-1800
887-3410 (Central administration office and customer relations number)

- Outpatient Clinics in various areas of the city (8am - 5pm)
- Sliding scale, Medicaid, Medicare and most insurances
- Initial screenings are free of charge
- **For crisis: open 24 hours a day; 779-1800**

Catholic Counseling Services
499 St. Matthews
872-8424
Monday and Wednesday - Friday 9:00am - 6:00pm
Tuesday 9:00am - 8:00pm
Closed 12:00pm - 1:00pm

- Sliding scale, Medicare, Medicaid, CHIP and most insurances
- Bilingual therapists
- Individual, family and marital therapy
- Walk-in to fill out paperwork: 9:30am -11:30am and 1:30pm - 5:30pm
- Initial appointment scheduled upon completion of paperwork
- Documents required include: proof of income (last 3 pay stubs), utility bill, and medical insurance (if available)

El Paso Child Guidance Center
2701 East Yandell
562-1999
Yandell Office: Monday-Thursday 8:00am - 7:00pm

9001 Cashew (off of Zaragosa)
860-2644
Zaragosa Office: Wednesday and Thursday - 9:00am - 7:00pm

- Sliding scale, Medicaid, and insurance
- Bilingual therapists
- Individual and family therapy for children and adults
- Marital therapy
- Psychiatrist on staff, but only for children
- Call and make appointment for intake
- **Rollercoaster Program:** offered twice a year, for children whose parents are going through a divorce (primary program for ages 5 to 8 and intermediate program for ages 9 to13) Divorce group for parents is offered at the same time as the rollercoaster program

Family Service of El Paso
6040 Surety
781-9900
Monday-Thursday 8:00am - 8:00pm
Friday 8:00am -7:00pm

- Medicaid, sliding scale, insurances, CHIP and Tricare (need a referral)
- Bilingual therapists
- Individual, family and marital therapy
- Intake information obtained by phone and a therapist will call back to schedule an appointment

Jewish Family and Children's Service
401 Wallenberg
581-3256
Monday, Wednesday and Thursday 8:30am -5:00pm,
Tuesday 8:30am - 8:00pm
Friday 8:30am - 4:00pm

- Sliding scale, Medicaid and insurance
- Intake appointment: $25
- Bilingual therapists
- Individual, family, marital and play therapy

Appendix D: Demographic Questionnaire – English Version

These questions are general questions about you.

Questions 1 to 18 will be asked during pregnancy

1. **What is your age?** _____

2. **What is your marital status?**
    a. _____Single
    b. _____Married; living with partner
    c. _____Married; living apart from partner
    d. _____Separated
    e. _____Divorced
    f. Other, please specify_____

3. **Where were you born?**
    a. _____United States
    b. _____Mexico
    c. If other specify country_____

    4. **Where was your father born?**
    a. _____United States
    b. _____Mexico
    c. If other specify country_____

    5. **Where was your mother born?**
    a. _____United States
    b. _____Mexico
    c. If other specify country_____

6. **Where did you go to school?**
    a. _____United States
    b. _____Mexico
    c. _____Both the United States and Mexico
    d. _____Other

7. **What is the highest school grade you finished?** _____

8. **How long have you lived in the United States?** _____

9. **How long have you lived in El Paso?** _____

10. **How many children do you have?** _____

11. **Do you have insurance? Yes_____   No____   If yes, what type?**
    a. _____ Private
    b. _____ Medicaid
    c. _____ Tricare/military coverage
    d. Other, please specify_____

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12. **What is your employment status?**
   a. _____ Full time
   b. _____ Part time
   c. _____ Housewife
   d. _____Unemployed
   e. Other, please specify_____

13. **If employed, what type of work do you do?** _____

14. **Please give your best estimate of your yearly household income in dollars?**
   a. _____ less than $10,000 per year
   b. _____ $10,000 to $19,999 per year
   c. _____ $20,000 to $29,999 per year
   d. _____$30,000 to $39,999 per year
   e. _____$40,000 to $49,999 per year
   f. _____more than $50,000 per year
   g. _____ Prefer not to comment

15. **How many weeks pregnant are you?** _____

16. **What is your due date?** _____

17. **When you got pregnant with your baby were you trying to get pregnant?** Yes _____ No _____

18. **Before you got pregnant, how did you feel about becoming pregnant?** (Pick only one response)
   a. ____I wanted to be pregnant sooner
   b. ____I wanted to be pregnant later
   c. ____I wanted to be pregnant when I got pregnant
   d. ____I didn't want to be pregnant when I got pregnant or at any time in the future

Questions for six weeks postpartum:

19. **What type of delivery did you have?**
   a. ____vaginal
   b. ____Cesarean section

20. **What was the sex of your baby?**
   a. ____Male
   b. ____Female

21. **Are you breastfeeding?** Yes _____ No _____

<div align="center">**Thank you for your participation**</div>

Appendix E: Demographic Questionnaire – Spanish Version

Cuestionario demográfico

Estas son preguntas generales acerca de usted.

Preguntas 1 a 18 son para las mujeres que están embarazada:

1. **¿Cuál es su edad?** _____

2. **¿Cuál es su estado matrimonial?**
   a. _____Soltera
   b. _____Casada; vivo con mi esposo o socio
   c. _____Casada; vivo aparte de esposo o socio
   d. _____Separada
   e. _____Divorciada
   f. Otro, especifica por favor _____

3. **¿Donde nació?**
   a. _____ los Estados Unidos
   b. _____ México
   c. Si otro país, especifica por favor _____

4. **¿Donde nació su padre?**
   a. _____ los Estados Unidos
   b. _____ México
   c. Si otro país, especifica por favor _____

5. **¿Donde nació su madre?**
   a. _____ los Estados Unidos
   b. _____ México
   c. Si otro país, especifica por favor _____

6. **¿Donde fue a la escuela?**
   a. _____ los Estados Unidos
   b. _____ México
   c. _____ los Estados Unidos y México
   d. Si otro país, especifica por favor _____

7. **¿Cuántos años de escuela termino usted?** _____

8. **¿Cuánto tiempo ha vivido en los Estados Unidos?** _____

9. **¿Cuánto tiempo ha vivido en El Paso?** _____

10. **¿Cuántos hijos tiene usted?** _____

11. **¿Tiene seguranza?** Si_____ No_____ **Si responde sí, ¿qué tipo de seguranza tiene?**
    a. _____ Privado
    b. _____ Medicaid
    c. _____ Cobertura de Tricare/militar
    d. Otro, por favor especifica _____

12. **¿Cuál es su estado de empleo?**
    a. _____ A tiempo completo
    b. _____ Tiempo de parte
    c. _____ Ama de casa
    d. _____ Desempleada
    e. Otro, por favor especifica _____

13. **¿Si esta empleada, qué trabajo hace?** _____

14. **¿Por favor dar su mejor estimación de su ingreso anual de su hogar en dólares?**
    a. _____ menos de $10,000 dólares por año
    b. _____ $10,000 a $19,999 dólares al año
    c. _____ $20,000 a $29,999 dólares al año
    d. _____ $30,000 a $39,999 dólares al año
    e. _____$40,000 a $49,999 dólares al año
    f. _____ más de $50,000 dólares al año
    g. _____ Prefirió no comentar

15. **¿Cuántas semanas de embarazo se encuentra**? _____

16. **¿Qué es su fecha de aliviarse?** _____

17. **¿Este embarazo fue planificado**? Sí _____ No _____

18. **Antes de que usted quedara embarazada, ¿cómo se sintió acerca de estar embarazada? (Marca solamente una respuesta)**

    a. ____Hubiera querido quedar embarazada más pronto
    b. ____ Hubiera querido quedar embarazada más tarde
    c. ____ Quería estar embarazada cuando quede embarazada
    d. ____ No quería quedar embarazada ahorita cuando quede embarazada o ni tampoco en el futuro

Preguntas 19 a 21 son para las mujeres que ya se han aliviado (seis semanas después del parto):

19. **¿Qué tipo de parto tuvo?**
    a. ____Normal (vaginal)
    b. ____ Por Cesario

20. **¿Cuál fue el sexo de su bebé?**
    a. ____Niño
    b. ____Niña

21. **¿Esta lactando su bebé?** Sí _____ No_____

Gracias por su participación

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Appendix F: Perceived Stress Scale – English Version

Instructions: The questions in this scale ask you about your feelings and thoughts during the **last month**. In each case, please circle the response that best corresponds with how often you felt or thought a certain way.	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you dealt successfully with day to day problems and annoyances?	0	1	2	3	4
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
7. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
8. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
9. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
10. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
11. In the last month, how often have you been angered because of things that happened that were outside of your control?	0	1	2	3	4
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?	0	1	2	3	4
13. In the last month, how often have you been able to control the way you spend your time?	0	1	2	3	4
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Adapted from: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior,* 24, 385-396. Questions reproduced from Dr. Cohen's Scales: Perceived Stress Scale (PSS; English – 14 items)
http://www.psy.cmu.edu/~scohen/

Appendix G: Perceived Stress Scale – Spanish Version

Instrucciones: Marca la opción que mejor se adecúe a tu situación actual, teniendo en cuenta el *último* mes.	Nunca	Casi nunca	De vez en cuando	A menudo	Muy a menudo
1. ¿Con qué frecuencia has estado afectado/a por algo que ha ocurrido inesperadamente?	0	1	2	3	4
2. ¿Con qué frecuencia te has sentido incapaz de controlar las cosas importantes de tu vida?	0	1	2	3	4
3. ¿Con qué frecuencia te has sentido nervioso/a o estresado/a (lleno de tensión)?	0	1	2	3	4
4. ¿Con qué frecuencia has manejado con éxito los pequeños problemas irritantes de la vida?	0	1	2	3	4
5. ¿Con qué frecuencia has sentido que has afrontado efectivamente los cambios importantes que han estado ocurriendo en tu vida?	0	1	2	3	4
6. ¿Con qué frecuencia has estado seguro/a sobre tu capacidad de manejar tus problemas personales?	0	1	2	3	4
7. ¿Con qué frecuencia has sentido que las cosas te van bien?	0	1	2	3	4
8. ¿Con qué frecuencia has sentido que no podías afrontar todas las cosas que tenías que hacer?	0	1	2	3	4
9. ¿Con qué frecuencia has podido controlar las dificultades de tu vida?	0	1	2	3	4
10. ¿Con qué frecuencia has sentido que tienes el control de todo?	0	1	2	3	4
11. ¿Con qué frecuencia has estado enfadado/a porque las cosas que te han ocurrido estaban fuera de tu control?	0	1	2	3	4
12. ¿Con qué frecuencia has pensado sobre las cosas que no has terminado (pendientes de hacer)?	0	1	2	3	4
13. ¿Con qué frecuencia has podido controlar la forma de pasar el tiempo (organizar)?	0	1	2	3	4
14. ¿Con qué frecuencia has sentido que las dificultades se acumulan tanto que no puedes superarlas?	0	1	2	3	4

Reproducido de: Gonzalez-Ramirez, M.T. & Landero-Hernandez, R. (2007). Factor structure of the Perceived Stress Scale (PSS) in a sample from Mexico. *The Spanish Journal of Psychology, 10*, 199-206.

Appendix H: Pregnancy Related Stress Inventory (PRSI) – English Version

INSTRUCTIONS:
The questions in this scale ask you about the concerns you have experienced during your pregnancy. Read the item and decide if you have experienced the concern (yes or no). If you have, mark yes and then place an "X" in the ❒ next to the response best representing how upsetting that concern was to you.
During this pregnancy, I have been concerned that:

1. **I don't have enough money or insurance to pay for my pregnancy and birth.**
    ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

2. **My home or neighborhood is not a safe place for me.** ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

3. **My home or neighborhood is not a safe place to raise my baby.** ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

4. **I will not be able to continue to work as I need to.** ____Yes ____No
    ❒0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

5. **I will not be able to continue to go to school.** ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

6. **The baby's father will not give me any money to help care for the baby.**
    ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

7. **The baby's father will not help me care for the baby.** ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

8. **I got married before I was ready to because I was pregnant.** ____Yes ____No
    ❒ 0=not at all upsetting ❒ 1=a little upsetting ❒ 2=moderately upsetting ❒ 3=very upsetting

9. **My boyfriend/spouse has been unhappy about the pregnancy.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

10. **My boyfriend/spouse does not want to be close to me or have sex with me because of the pregnancy.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

11. **My boyfriend/spouse and I do not agree on how to parent.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

12. **My parents or in-laws don't approve of this pregnancy.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

13. **My parents or in-laws have been overbearing about this pregnancy.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

14. **My parents or in-laws don't approve of the choices I have made in my life because of this pregnancy.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

15. **This pregnancy has a negative effect on my relationships with my family members.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

16. **I will not be a good mother to my baby.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

17. **My children will not love or accept the new baby.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

18. **I won't be able to pay enough attention to my other children after the baby is born.** ____Yes ____No
☐ 0=not at all upsetting ☐ 1=a little upsetting ☐ 2=moderately upsetting ☐ 3=very upsetting

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19. **The baby I am carrying will be hard to raise.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

20. **My relationships with my friends will change for the worse.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

21. **My smoking, alcohol, caffeine, and/or drug use will affect the baby I am carrying.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

22. **A complication I had with another pregnancy or birth will happen again.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

23. **The physical work I do might hurt my baby.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

24. **I'm very moody with my loved ones.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

25. **Changes in my body size and shape are ugly.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

26. **I will have trouble with breastfeeding the baby.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

27. **The problems other people have with their pregnancies or births might happen to me.** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

28. **Something bad will happen if I don't follow the beliefs my family and/or friends have told me about (like wearing a safety pin for protection, mal de ojo).** ____Yes ____No
❏ 0=not at all upsetting ❏ 1=a little upsetting ❏ 2=moderately upsetting ❏ 3=very upsetting

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29. **I will not have support and be accepted by the people at my church.** ____Yes ____No
❑ 0=not at all upsetting ❑ 1=a little upsetting ❑ 2=moderately upsetting ❑ 3=very upsetting

30. **I will have trouble finding someone good to take care of the baby when I have to back to work or school.**
____Yes ____No
❑ 0=not at all upsetting ❑ 1=a little upsetting ❑ 2=moderately upsetting ❑ 3=very upsetting

31. **I don't feel well because of symptoms with the pregnancy.** ____Yes ____No
❑ 0=not at all upsetting ❑ 1=a little upsetting ❑ 2=moderately upsetting ❑ 3=very upsetting

32. **I have not been happy with the health care related to my pregnancy.** ____Yes ____No
❑ 0=not at all upsetting ❑ 1=a little upsetting ❑ 2=moderately upsetting ❑ 3=very upsetting

33. **Other pregnancy concern not listed (specify):**

Thank you for your participation

Appendix I: Pregnancy Related Stress Inventory (PRSI) – Spanish Version

INSTRUCCIONES:
Las siguientes cuestiones tratan con sus preocupaciones durante su embarazo. Lee cada frase y decida si tiene o no tiene (sí o no) la preocupación descrita. Si responde sí, marque un "X" en el ❏ delante de la respuesta que mejor representa como se siente sobre la preocupación.
Durante este embarazo, yo he estado preocupada que….

1. **No tengo dinero o no tengo seguro médico para pagar los gastos del embarazo y el parto.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

2. **Mi hogar o barrio no es un lugar seguro para mí.** ____ Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

3. **Mi hogar o barrio no es un lugar seguro para criar a mi bebe.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

4. **No podré continuar trabajando como lo necesito.** ____ Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

5. **No podre continuar yendo a la escuela.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

6. **El papa de este bebé no me dará nada de dinero para cuidarlo.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

7. **El papa de este bebé no me va ayudar a cuidarlo.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

8. **Me tuve que casar antes de sentirme lista porque me embarace.** ____Sí ____No
   ❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

9. **Mi novio/marido no ha estado feliz acerca de este embarazo.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

10. **Mi novio/marido no quiere estar juntos a mi o tener relaciones sexuales conmigo por el embarazo.** ____ Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

11. **Mi novio/marido y yo no estamos de acuerdo como criar niños.** ____ Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

Mis padres o mis suegros no aprueban de este embarazo. ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

13. **Mis padres o mis suegros han estado dominantes con este embarazo.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

14. **Mis padres o mis suegros no aprueban de las decisiones que yo he hecho con mi vida con respecto del embarazo.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

15. **Este embarazo ha tenido un efecto malo con mis relaciones familiares.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

16. **No yo hacer una buena mama para me bebé.** ____Sí ____No
☐0= no me molesta ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

17. **Mis hijos no van a querer o aceptar al nuevo bebé.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

18. **No podre darle mucha atención a mis otros hijos después que nazca el bebé.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

19. **Será difícil criar este bebé.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

20. **Mis relaciones con mis amigos van a cambiar para lo peor.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

21. **El tabaco, alcohol, cafeína y/o las drogas ilegales que he usado van afectar al bebé de este embarazo.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

22. **Una complicación que yo tuve con otro embarazo o parto ova ha pasar de nuevo.** ____Sí ____No
☐0= no me molesta ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

23. **El trabajo físico que yo hago puede lastimar al bebé.** ____ Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

24. **Estoy de mal humor con mis seres queridos.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

25. **Cambios del tamaño y figura de me cuerpo son feos.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

26. **Tendré problemas dándole el pecho al bebé.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

27. **Los problemas que otras mujeres han tenido con sus embarazos o partos me pueden ocurrir a mí.** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

28. **Algo malo pasara si no sigo los costumbres que mi familia y/o mis amigos me han dicho (como usando un imperdible/seguro para protección, mal ojo).** ____Sí ____No
☐0= no me molesta en todo ☐1=me molesta un poco ☐2=me molesta medianamente ☐3=me molesta mucho

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29. **La gente de mi iglesia no me va dar apoyo o no me van aceptar.** _____Sí _____No
❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

30. **Voy ha tener dificultad en encontrar a alguien que cuide el bebé cuando tenga que regresar a las escuela o el trabajo.** _____Sí _____No
❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

31. **No me siento bien porque tengo síntomas del embarazo (como vómitos y asco).** _____Sí _____No
❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

32. **No me siento feliz con los cuidados médicos relacionados con este embarazo.** _____Sí _____No
❏0= no me molesta en todo ❏1=me molesta un poco ❏2=me molesta medianamente ❏3=me molesta mucho

33. **Otra concierna del embarazo quo no está (especifique):**

Gracias por su participación

Appendix J: Brief COPE (Pregnancy) – English Version

INSTRUCTIONS: The questions in this scale ask you about some ways of coping with difficult situations. Think of the difficulties you faced **during pregnancy**. Circle the response that best represents how you coped.	I didn't do this at all	I did this a little bit	I did this a medium amount	I did this a lot
1. I turned to work or other activities to take my mind off things.	1	2	3	4
2. I concentrated my efforts on doing something about the situation I'm in.	1	2	3	4
3. I said to myself "this isn't real."	1	2	3	4
4. I used alcohol or other drugs to make myself feel better.	1	2	3	4
5. I got emotional support from others.	1	2	3	4
6. I gave up trying to deal with it.	1	2	3	4
7. I took action to try to make the situation better.	1	2	3	4
8. I refused to believe that it has happened.	1	2	3	4
9. I said things to let my unpleasant feelings escape.	1	2	3	4
10. I used alcohol or other drugs to help me get through it.	1	2	3	4
11. I tried to see it in a different light, to make it seem more positive.	1	2	3	4
12. I tried to come up with a strategy about what to do.	1	2	3	4
13. I got comfort and understanding from someone.	1	2	3	4
14. I gave up the attempt to cope.	1	2	3	4
15. I looked for something good in what is happening.	1	2	3	4
16. I made jokes about it.	1	2	3	4
17. I did something to think about it less, such as going to the movies, watching TV, reading, daydreaming, sleeping or shopping.	1	2	3	4
18. I accepted the reality of the fact that it has happened.	1	2	3	4
19. I expressed my negative feelings.	1	2	3	4
20 I tried to find comfort in my religion or spiritual beliefs.	1	2	3	4
21. I learned to live with it.	1	2	3	4
22. I thought hard about what steps to take.	1	2	3	4
23. I prayed or meditated.	1	2	3	4
24. I made fun of the situation.	1	2	3	4

Appendix K: Brief COPE (Pregnancy) – Spanish Version

INSTRUCTIONES: Las siguientes preguntas hablan de los modos que alguien maneja situaciones difíciles. Piensa a los dificultades que encontré **durante su embarazó** y marque la respuesta a cada cuestión que corresponde a la maniera que usted combate estrés.	**No hice esto en lo absoluto**	**Hice esto un poco**	**Hice esto con cierta frecuencia**	**Hice esto con mucha frecuencia**
1. Yo me enfoque en el trabajo y otras actividades para distraer mi mente.	1	2	3	4
2. Yo concentre mis esfuerzos para haces algo acerca de la situación en la que estaba.	1	2	3	4
3. Yo me dije a mi misma, esto no es real.	1	2	3	4
4. Yo use alcohol y otras drogas para sentirme mejor.	1	2	3	4
5. Yo recibí apoyo emocional de otras personas.	1	2	3	4
6. Yo me di por vencida de tratar de lidiar con esto.	1	2	3	4
7. Yo tome acción para poder mejorar la situación.	1	2	3	4
8. Yo rehusé creer que esto hubiera pasado.	1	2	3	4
9. Yo dije cosas para dejar escapar mis sentimientos desagradables.	1	2	3	4
10. Yo use alcohol y otras drogas para que me ayudaran a pasar por esto.	1	2	3	4
11. Yo trate de verlo con un enfoque distinto para que pareciera más positivo.	1	2	3	4
12. Yo trate de crear una estrategia para saber qué hacer.	1	2	3	4
13. Yo recibí apoyo y comprensión de alguien.	1	2	3	4
14. Yo deje de hacerle frente a la situación en la que estaba.	1	2	3	4
15. Yo busque algo bueno en lo que estaba pasando.	1	2	3	4
16. Yo hice bromas acerca de esto.	1	2	3	4
17. Yo hice algo para pensar menos en esto, como ir al cine, ver televisión, leer, soñar despierta, dormir, o ir de compras.	1	2	3	4
18. Yo acepte la realidad de que esto haya pasado.	1	2	3	4
19. Yo expresé mis pensamientos negativos.	1	2	3	4
20. Yo trate de encontrar apoyo en mi religión o mis creencias espirituales.	1	2	3	4
21. Yo aprendí a vivir con esto.	1	2	3	4
22. Yo pensé mucho cuales eran los pasos a tomar.	1	2	3	4
23. Yo recé o medité.	1	2	3	4
24. Yo hice gracia de la situación.	1	2	3	4

Reproduced from: Department of Psychology College of Arts and Sciences, University of Miami
http://www.psy.miami.edu/faculty/ccarver/sclspan.html

Appendix L: Brief COPE (Postpartum) – English Version

INSTRUCTIONS: The questions in this scale ask you about some ways of coping with difficult situations. Think of the difficulties you faced **since the birth of your baby**. Circle the response that best represents how you coped.	I didn't do this at all	I did this a little bit	I did this a medium amount	I did this a lot
1. I turned to work or other activities to take my mind off things.	1	2	3	4
2 I concentrated my efforts on doing something about the situation I'm in.	1	2	3	4
3. I said to myself "this isn't real."	1	2	3	4
4. I used alcohol or other drugs to make myself feel better.	1	2	3	4
5. I got emotional support from others.	1	2	3	4
6. I gave up trying to deal with it.	1	2	3	4
7. I took action to try to make the situation better.	1	2	3	4
8. I refused to believe that it has happened.	1	2	3	4
9. I said things to let my unpleasant feelings escape.	1	2	3	4
10. I used alcohol or other drugs to help me get through it.	1	2	3	4
11. I tried to see it in a different light, to make it seem more positive.	1	2	3	4
12. I tried to come up with a strategy about what to do.	1	2	3	4
13. I got comfort and understanding from someone.	1	2	3	4
14. I gave up the attempt to cope.	1	2	3	4
15. I looked for something good in what is happening.	1	2	3	4
16. I made jokes about it.	1	2	3	4
17. I did something to think about it less, such as going to the movies, watching TV, reading, daydreaming, sleeping or shopping.	1	2	3	4
18. I accepted the reality of the fact that it has happened.	1	2	3	4
19. I expressed my negative feelings.	1	2	3	4
20 I tried to find comfort in my religion or spiritual beliefs.	1	2	3	4
21. I learned to live with it.	1	2	3	4
22. I thought hard about what steps to take.	1	2	3	4
23. I prayed or meditated.	1	2	3	4
24. I made fun of the situation.	1	2	3	4

Reproduced from: Department of Psychology College of Arts and Sciences, University of Miami
http://www.psy.miami.edu/faculty/ccarver/sclspan.html

Appendix M: Brief COPE (Postpartum) – Spanish Version

INSTRUCTIONES: Las siguientes preguntas hablan de los modos que alguien maneja situaciones dífíciles. Piensa a los dificultades que encontré **desde nació su bebe** y marque la respuesta a cada cuestión que corresponde a la maniera que usted combate estrés.	No hice esto en lo absoluto	Hice esto un poco	Hice esto con cierta frecuencia	Hice esto con mucha frecuencia
1. Yo me enfoque en el trabajo y otras actividades para distraer mi mente.	1	2	3	4
2. Yo concentre mis esfuerzos para haces algo acerca de la situación en la que estaba.	1	2	3	4
3. Yo me dije a mi misma, esto no es real.	1	2	3	4
4. Yo use alcohol y otras drogas para sentirme mejor.	1	2	3	4
5. Yo recibí apoyo emocional de otras personas.	1	2	3	4
6. Yo me di por vencida de tratar de lidiar con esto.	1	2	3	4
7. Yo tome acción para poder mejorar la situación.	1	2	3	4
8. Yo rehusé creer que esto hubiera pasado.	1	2	3	4
9. Yo dije cosas para dejar escapar mis sentimientos desagradables.	1	2	3	4
10. Yo use alcohol y otras drogas para que me ayudaran a pasar por esto.	1	2	3	4
11. Yo trate de verlo con un enfoque distinto para que pareciera más positivo.	1	2	3	4
12. Yo trate de crear una estrategia para saber qué hacer.	1	2	3	4
13. Yo recibí apoyo y comprensión de alguien.	1	2	3	4
14. Yo deje de hacerle frente a la situación en la que estaba.	1	2	3	4
15. Yo busque algo bueno en lo que estaba pasando.	1	2	3	4
16. Yo hice bromas acerca de esto.	1	2	3	4
17. Yo hice algo para pensar menos en esto, como ir al cine, ver televisión, leer, soñar despierta, dormir, o ir de compras.	1	2	3	4
18. Yo acepte la realidad de que esto haya pasado.	1	2	3	4
19. Yo expresé mis pensamientos negativos.	1	2	3	4
20. Yo trate de encontrar apoyo en mi religión o mis creencias espirituales.	1	2	3	4
21. Yo aprendí a vivir con esto.	1	2	3	4
22. Yo pensé mucho cuales eran los pasos a tomar.	1	2	3	4
23. Yo recé o medité.	1	2	3	4
24. Yo hice gracia de la situación.	1	2	3	4

Reproduced from: Department of Psychology College of Arts and Sciences, University of Miami
http://www.psy.miami.edu/faculty/ccarver/sclspan.html

Appendix N: Acculturation Rating Scale for Mexican Americans - II

Instructions: The items in this scale ask you about your language use, your family and your friends. **Circle** the number for each item that best represents your answer.	Not at all	Very little or not very often	Moderately	Much or very often	Extremely often or almost always
1. I speak Spanish	1	2	3	4	5
2. I speak English	1	2	3	4	5
3. I enjoy speaking Spanish	1	2	3	4	5
4. I associate with Anglos	1	2	3	4	5
5. I associate with Mexicans and/or Mexican Americans	1	2	3	4	5
6. I enjoy listening to Spanish language music	1	2	3	4	5
7. I enjoy listening to English language music	1	2	3	4	5
8. I enjoy Spanish language TV	1	2	3	4	5
9. I enjoy English langue TV	1	2	3	4	5
10. I enjoy English language movies	1	2	3	4	5
11. I enjoy Spanish language movies	1	2	3	4	5
12. I enjoy reading (e.g. books) in Spanish	1	2	3	4	5
13. I enjoy reading (e.g. books) in English	1	2	3	4	5
14. I write (e.g. letters) in Spanish	1	2	3	4	5
15. I write (e.g. letters) in English	1	2	3	4	5
16. My thinking is done in the English language	1	2	3	4	5
17. My thinking is done in the Spanish language	1	2	3	4	5
18. My contact with Mexico has been…	1	2	3	4	5
19. My contact with the USA has been…	1	2	3	4	5
20. My father identifies or identified himself as "Mexicano"	1	2	3	4	5
21. My mother identifies or identified herself as "Mexicana"	1	2	3	4	5
22. My friends, while I was growing up, were of Mexican origin	1	2	3	4	5
23. My friends, while I was growing up, were of Anglo origin	1	2	3	4	5
24. My family cooks Mexican food	1	2	3	4	5
25. My friends now are of Anglo origin	1	2	3	4	5
26. My friends are now of Mexican origin	1	2	3	4	5
27. I like to identify myself as an Anglo American	1	2	3	4	5
28. I like to identify myself as a Mexican American	1	2	3	4	5

29. I like to identify myself as a Mexican	1	2	3	4	5
30. I like to identify myself as an American	1	2	3	4	5

Reproduced from: Cuellar, I., Arnold, B., & Maldonado, R. (1995). The Acculturation Rating Scale for Mexican Americans-II (ARSMA-II). *Hispanic Journal of Behavioral Sciences,* 17, p.297-298.

Appendix O: Acculturation Rating Scale for Mexican Americans - II

Instrucciones: Marque con un circulo el numero entre 1 y 5 a las respuesta que sea más adecuada para usted.	Nada	Un poquito o a ves	Moderato	Mucho o muy frecuenté	Muchísimo casi todo el tiempo
1. Yo hablo español	1	2	3	4	5
2. Yo hablo Ingles	1	2	3	4	5
3. Me gustar hablar en Español	1	2	3	4	5
4. Me asocio con Anglos	1	2	3	4	5
5. Yo me asocio con mexicanos o con Norte Americanos	1	2	3	4	5
6. Me gusta la música mexicana (música en idioma mexicana)	1	2	3	4	5
7. Me gusta la música de idioma ingles	1	2	3	4	5
8. Me gusta ver programas en la televisión que sean en español	1	2	3	4	5
9. Me gusta ver programas en la televisión que sean en ingles	1	2	3	4	5
10. Me gusta ver películas en ingles	1	2	3	4	5
11. Me gusta ver películas en español	1	2	3	4	5
12. Me gusta leer libros en español	1	2	3	4	5
13. Me gusta leer libros en ingles	1	2	3	4	5
14. Escribo cartas en español	1	2	3	4	5
15. Escribo cartas en ingles	1	2	3	4	5
16. Mis pensamientos ocurren en el idioma ingles	1	2	3	4	5
17. Mis pensamientos ocurren en el idioma español	1	2	3	4	5
18. Mi contacto con Mexico ha sido…	1	2	3	4	5
19. Mi contacto con los estados unidos has sido…	1	2	3	4	5
20. Mi padre se identifica como mexicano	1	2	3	4	5
21. Mi madre se identifica como mexicana	1	2	3	4	5
22. Mis amigos(as) de mi niñez eran de origen mexicano	1	2	3	4	5
23. Mis amigos(as) de mi niñez eran de origen Anglo Americano	1	2	3	4	5
24. Mi familia cocina comidas mexicanas	1	2	3	4	5
25. Mis amigos(as) recientes son Anglo Americano	1	2	3	4	5
26. Mis amigos(as) recientes son mexicanos	1	2	3	4	5
27. Me gusta identificarme como Anglo Americano	1	2	3	4	5
28. Me gusta identificarme como Norte Americano	1	2	3	4	5

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29. Me gusta identificarme como mexicano	1	2	3	4	5
30. Me gusta identificarme como una americana	1	2	3	4	5

Reproducido de: Cuellar, I., Arnold, B., & Maldonado, R. (1995). The Acculturation Rating Scale for Mexican Americans-II (ARSMA-II). *Hispanic Journal of Behavioral Sciences,* 17, p.297-298

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Vita

Rena Marie DiGregorio is a nurse who earned her Bachelor of Science in Nursing from the University of New Mexico in 1982 and her Master of Science in Nursing from the University of Texas at El Paso in 2004. Shortly after earning her master's degree she began pursuing her Ph.D. in Interdisciplinary Health Sciences at the University of Texas at El Paso.

Ms. DiGregorio has a varied nursing background. She began her nursing career at a large academic medical center in New Mexico where she was employed for 16 years and held positions as a staff nurse, nurse recruiter, and area director for adult patient care services.

Ms. DiGregorio also worked in health care policy, quality monitoring, and graduate nursing education. Her health care policy experience was with a state health care membership organization in New Mexico where she collaborated with state health care agencies and other state health care professional organizations on issues related to prenatal care utilization, performance benchmarking and patient safety. Her quality monitoring experience includes coordinating Joint Commission accreditation activities for nursing services and working as a medical site reviewer in southern New Mexico and west Texas for a credentialing and monitoring service contracted by the health care plans in New Mexico. Most recently, she was a contract lecturer for the School of Nursing at the University of Texas at El Paso teaching a graduate nursing course in health care policy, law and ethics. She is experienced with face to face, hybrid and online course delivery and is familiar with online course development using the Blackboard Learning System.

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