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Cultural Influences on the Weight, Diet, and Physical Activity of Pregnant Immigrant Latinas

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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health – Community Health

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Abstract

The problem addressed in this phenomenological study is how culture and acculturation can potentially influence gestational weight during pregnancy, leading to overweight and obesity among immigrant Latinas. To understand the possible influence of culture and acculturation on the diet, exercise, and weight of pregnant immigrant Latinas, the experiences of immigrant Latinas who had undergone a pregnancy in Mexico and were pregnant in California were examined. The ecological model theory was applied as a framework for exploring the participants' experiences regarding nutrition, physical activity, and weight gain. Semistructured interviews with 10 qualified participants were conducted. Data analysis entailed an inductive approach based on the following phases of qualitative data analysis: data reduction, data display, and conclusion and verification. Clustered responses were presented around the major themes. Six major themes were derived from the data. These were: (a) bicultural lifestyles; (b) personal adjustments relating to pregnancy and prenatal care; (c) low levels of social and relational support; (d) adjustments regarding diet, nutrition, food security, and access; (e) changes in the form and extent of physical activity in the United States; and (f) rapid weight gain experienced during pregnancies undergone in the United States. Social change implications include encouraging public health professionals, health educators, and community health workers to focus on the importance of culture and acculturation on the health of Latinas in order to ensure positive infant and maternal health outcomes.

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Dedicated with Great Love…

To my two children, Hristo Ociel and Mayalina Elizabeth, for their unconditional love and motivation. They are the wind beneath my wings.

To my immigrant parents, Antonio and Martha, for their unconditional love, inspiration, courage, support, and for their constant words of perseverance: "*¡Querer es Poder!*" (Where there's a will there's a way!)

To my *familia* (family) and *amigos* (friends), for their love, motivation, and support.

To all the immigrant Latina *luchonas* (fighters) in Watsonville, California who sacrificed their lives for their children and families in this country.

To all those who supported, encouraged, and challenged me, may you take pride in my accomplishments, knowing that you are contributing to my success.

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I thank God for allowing me to reach this point in my life, for my faith, my fruits of wisdom, and for all that I am.

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I am grateful to Dr. Jacquie Fraser and Dr. Sandra W. Bever who guided and encouraged me and showed wisdom and patience throughout this project.

> *We cannot seek achievement for ourselves and forget about progress and prosperity for our community ... Our ambitions must be broad enough to include the aspirations and needs of others, for their sakes and for our own*. – Cesar Chavez

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Chapter 1: Introduction to the Study

Overview

Given high obesity rates in the United States, there is a growing concern about excessive gestational weight gain during pregnancy because of the increased risks and implications that it entails for both mother and child (Cannella, Lobel, & Monheit, 2010; Gardner, Wardie, Poston, & Croker, 2011; Thornton et al., 2006). Pregnancy is considered to be a strong risk factor for new or persistent obesity (Herring, Rose, Skouteris, Oken, 2012). According to the Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report (CDC MMWR; 2015), less than one third of women in the United States had gestational weight gain that fell within the range of the guidelines provided by the Institute of Medicine (IOM). Deputy, Sharma, Kim, and Hinkle (2015) reported that 21% of pregnant women gained less than the recommended amount of weight and 47% gained more than the recommended amount among the 28 states that participated in the 2010 or 2011 Pregnancy Risk Assessment Monitoring System. In California, Latinas are more likely than White, Black, and Asian/Pacific Islander women to enter pregnancy overweight or obese (California Department of Public Health [CDPH], 2012). Latinas are also more likely to gain excessive weight during pregnancy than Asian/Pacific Islander women (CDPH, 2012). It is hypothesized that the causes of excessive gestational weight gain range from individual behaviors to cultural influences. Evidence indicates that acculturation has an overall negative effect on health behaviors, including diet, birth outcomes (low birthweight and prematurity), and substance abuse among Latinos living in the United States (Bolstad & Bungum, 2013; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005). In this study, I examined the

effects of culture and acculturation on weight, diet, and physical activity of pregnant, immigrant Latinas of Mexican descent living in Watsonville, California. This chapter presents an overview and theoretical framework for the study. Gaps in the literature are identified to highlight the relevance and importance of this issue.

Background of the Study

The prevalence of overweight and obesity is especially high among Latina women of childbearing age (Flegal, Carroll, Ogden, & Curtin, 2010). Body Mass Index (BMI) is a calculation based on a person's weight and height. Obesity is defined as a BMI of 30 or more (CDC, 2014). Overweight is defined as a BMI ranging between 25.0 and 29.9 (CDC, 2014). In the United States, 78% of Mexican American women were found to be overweight or obese, as compared to only 60.3% of non-Hispanic White women (CDC, 2013b). In California, 37.3% of Latinas aged 18–40 living under 300% of the federal poverty level were overweight, and 30.1% were obese (California Health Interview Survey, 2014). Obesity, diabetes, hypertension, and asthma have been found to affect high percentages of California women before and during pregnancy. According to the California Healthcare Foundation (2013), disparities exist in relation to selected chronic conditions (i.e., obesity and diabetes) before and during pregnancy for certain ethnic and racial groups. In 2011, the following rates relating to obesity were reported: Latinas 26.5%, White women 16.8%, and women of Asian/Pacific Island ethnicity 7.8%. Latinas had higher rates of diabetes (10.4%) compared with women who were White (8.8%) and Black (8.0%; California Healthcare Foundation, 2013). Latinas under the age of 45 years who are overweight or obese are most likely to underestimate their weight category as a result of misperceptions about weight and body image (California Department of Health

Care Services and California Department of Public Health [CDHCS & CDPH], 2012). Nearly six out of ten Latina women of childbearing age are not physically active, making it harder to maintain a healthy weight (League of United Latin American Citizens [LULAC], 2012). According to the CDPH Maternal and Infant Health Assessment Survey (2012), 52% of Latinas were overweight or obese before pregnancy compared with 35.7% of White women. With regard to excessive weight gain during pregnancy, the rates for Latinas and White women were 40.1% and 48.6%, respectively (CDPH, 2012). Although Latinas did not demonstrate overly excessive weight gain during pregnancy, the patterns of being overweight or obese before and during pregnancy potentially puts the mother and baby at risk for health complications. Excess weight gain during pregnancy has been associated with pregnancy complications, including cesarean delivery, large-for-gestational-age infants, and postpartum weight retention (Tovar, Chasan-Taber, Bermudez, Hyatt, & Must, 2010). Latinas of childbearing age are entering pregnancy at a higher weight and are more likely to gain excess weight during pregnancy (CDPH, 2012). Therefore, identifying factors that affect the development of obesity at early stages is critical. Cultural and acculturation factors may play an important role in the development of excess weight gain before and during pregnancy, but research is limited (Akresh, 2007; Barrera, Toobert, Strycker, & Osuna, 2012; Fuentes-Afflick & Hessol, 2008a; Lara et al., 2005; Wolin, Colangelo, Chiu, & Gapstur, 2009).

In California, Latinas have the highest birth rates. In 2014, there were 502,973 live births of which the greatest number (237,326) were to Latinas (California Department of Public Health, Birth Records [CDPH BR], 2014). Among the total group of Latinas, those between the ages of 20 and 34 had the highest number of births

(179,916; CDPH BR, 2014). Fertility rates are one of the key drivers of California's population growth. From 2010 to 2014, Latinas had higher fertility rates compared to White and Black women in California (California Department of Public Health, Birth Records & California Department of Finance [CDPH BR & CDOF], 2014). Latinas' fertility rates are particularly important because Latinas make up a large and growing share of the state's women of reproductive age (CDPH BR & CDOF, 2014). More than 80% of Latinas in California are of Mexican origin and 10% are of Central/South American origin (Kim et al., 2010). Latinas, in particular those of Mexican descent, continue to be the largest immigrant minority in the United States (Wallace & Castaneda, 2010). Approximately 12 million Mexicans and 21 million Mexicans of second and third generations and beyond currently reside in the United States (Wallace & Castaneda, 2010). Latinas account for 46% of the 12 million Mexican immigrants in the United States (Wallace & Castaneda, 2010). Given that Latinas have the highest number of live births in California and are the fastest growing population in the United States, the current prevalence and predicted increase of body weight before and during pregnancy is cause for concern (CDPH, 2012; CDPH BR, 2012; U.S. Census Bureau News, 2012).

Research has indicated that cultural and social contexts can influence high gestational weight gain among immigrants as a result of acculturation and adjustment in the host country (Barrera et al., 2012; Evenson, Moos, Carrier, & Siega-Riz, 2009; Everette, 2008; Herring, Rose, et al., 2012). Consequently, acculturation has been associated with several negative effects on maternal and infant health outcomes among immigrants (Ceballos & Palloni, 2010). Acculturation is defined as the overall process of cultural involvement with the following subcomponents. The first is the extent to which

an individual or group retains culture-of-origin involvement. The second is the extent to which host culture involvement is established (Smokowski, Rose, & Bacallao, 2008). Studies have linked acculturation to overweight and obesity among immigrant Latinas as a result of behavior and social conditions such as changes in diet, exercise, stress, and cultural norms (see Fuentes-Afflick & Hessol, 2008b; Wolin et. al., 2009). As Latinas become more acculturated, that is, as the length of time that they have lived in the host country increases, they tend to lose their protective cultural factors and practices. This loss negatively impacts their perinatal advantages (Callister & Birkhead, 2002). Protective cultural factors and practices include maintenance of indigenous cultural dietary practices; promotion of healthy lifestyles; low levels of substance abuse; caring and supportive family networks; positive attitudes toward and valuing of childbearing and childrearing; and spiritual lifestyles and strong religious beliefs and practices (Callister & Birkhead, 2002).

A consistent body of literature has shown that the longer the time spent by Latino immigrants in the United States, the more likely they are to exhibit risky health behaviors that can impact on their health and well-being (Harley & Eskenazi, 2006; Harley, Stamm, & Eskenazi, 2007; Hawkins, Gillman, Shafer, & Cohen, 2014; Isasi et al., 2015; Matias, Stoecklin-Marois, Tancredi, & Schenker, 2013; Palreddy, Rico, Xiong, & Santiago-Rivera, 2010; Wolin et al., 2009). While this literature has advanced understanding of acculturation and its impacts on Latinos, there is limited knowledge about how acculturation is related to length of time spent in the United States (Hawkins et al., 2014; Palreddy et al., 2010). Thus, an examination of the length of time in the United States is necessary to help develop a better understanding of the needs and experiences of the

Latino population in the United States (Palreddy et al., 2010). In a multivariable analysis, the effects of obesity were found to be twice as high among women living in the United States for more than 20 years compared with those who had been in the United States for 10 years or less (Wolin et al., 2009). Isasi et al. (2015) confirmed that the strongest predictor of moderate and extreme obesity was the length of residency in the United States across individuals of Hispanic/Latino backgrounds. Matias et al. (2013) noted that individuals born in Mexico or Central America who had a longer United States residency were less likely to consume more than five daily fruits and vegetables servings and more likely to consume prepared foods products while working. In addition, studies have linked the length of residence in the United States with the decreased likelihood of initiating breastfeeding and a shorter duration of breastfeeding (Chapman & Pérez-Escamilla, 2013; Harley et. al., 2007). For example, the median duration of exclusive breastfeeding was 2 months for women living in the United States for 5 years or less, 1 month for women living in the country for 6 to 10 years, and less than 1 week for women living there for 11 years or more, or for their entire lives (Harley et. al., 2007). No time frame for when acculturation occurs for Latina immigrants has been determined. However, it is clear that after 10 years, women of Mexican origin may lose their cultural traditions and their protective cultural factors and practices as a result of the time they have spent in the United States (Callister & Birkhead, 2002; Harley et. al., 2007; Palreddy et al., 2010; Isasi et al., 2015). With this in mind, I focused on the shorter duration of time spent in the United States to assess whether culture had already had an influence.

Akresh (2007) has found that immigrants are healthier than the native population when they first arrive in the host country. However, as their time in the host country increases, their health declines (Akresh, 2007). Latinas have been found to be more easily influenced by their own cultural heritage and, simultaneously, by the social and economic realities of the majority society with increases in time spent in the United States and their participation in the American lifestyle (Kaplan, Erickson, Stewart, & Crane, 2001). For example, Latinas are known to adapt and assimilate to "Americanization," whereby an individual adopts behaviors such as eating fast foods and relying on transportation for their daily errands (Pichon et al., 2007). Acculturation is typically accompanied by changes in attitudes, behaviors, norms, and values that may influence health behaviors (Kaplan et al., 2001).

Latinas know that consuming a healthy diet and being physically active constitute a healthy lifestyle for them and their families (Pichon et al., 2007). However, because of their aspiration to adopt and assimilate to the "American" lifestyle, they are forced to lose their protective cultural factors and practices that benefit them and their families (Pichon et al., 2007). For example, traditionally Mexican women would cook fresh ingredients and limit meat intake for their families on a daily basis in Mexico. However, after their arrival in the United States, they adapt and assimilate American behaviors (Pichon et al., 2007). American diets often contain more processed foods than those in other countries, and processed foods tend to be high in sodium and fat (Akresh, 2007). The World Health Organization (2014) has recommended the "Making Pregnancy Safer" initiative as a key approach for engaging and working with individuals, families, and communities in promoting health and empowerment to improve maternal and newborn health outcomes.

Problem Statement

Recent data have demonstrated that Latina women of childbearing age enter pregnancy overweight or obese (CDPH, 2012). Maternal obesity and excessive gestational weight gain have been associated with morbidities, including hypertensive pregnancy, preeclampsia, gestational diabetes mellitus, cesarean delivery, failed inductions, fetal macrosomia, neonatal hypoglycemia, perinatal mortality, and infant and childhood obesity (Artal, Lockwood, & Haywood, 2010; Shub, Huning, Campbell, & McCarthy, 2013). Women with higher gestational weight gain tend to remain heavier post-pregnancy, and their children are more likely to have higher weights at birth, in childhood, during adolescence, and as adults (Herring, Henry, Klotz, Foster, & Whitmaker, 2012; Hickey, Uauy, Rodriguez, & Jennings, 1990; Lawlor, Lichtenstein, Fraser, & Langstrom, 2011; Olson, Strawderman, & Dennison, 2009; Schack-Nielsen, Michaelsen, Gamborg, Mortensen, & Sorensen, 2010).

Despite increasing birth rates among Latinas in California, in particular among immigrants of Mexican descent, there is limited published information available on the effects of culture and acculturation on the diet, physical activity, and weight of pregnant, immigrant Latinas. More specifically, the literature review revealed that published data lacked sufficient breadth and methodological rigor required to make comprehensive and definitive evidence-based recommendations about how to modify the acculturation effects of social and physical environments in the United States on the health of immigrant Latina women. Some studies have assessed whether acculturation is associated with body mass among childbearing Latinas (Fuentes-Afflick & Hessol, 2008a). Other studies have examined the association between acculturation and obesity among Latina

women (Wolin et al., 2009). Bolstad and Bungum (2013) examined the association of fruit and vegetables intake, acculturation, and body mass index in Hispanics living in southern Nevada. Still other studies have investigated dietary changes associated with greater acculturation and time spent in the United States (Akresh, 2007). There is, therefore, a need to learn how and why culture and acculturation influence weight, diet and physical activity during pregnancy among immigrant Latina women of Mexican descent. My literature review confirmed that despite the fact that culture is an important health determinant that affects health-related beliefs and behaviors within the Latino community, no study has been conducted in this area to date.

Purpose of the Study

The purpose of this study was to examine the effects of culture and acculturation on diet, physical activity, and weight among pregnant, immigrant Latinas of Mexican descent in Watsonville, California. Its findings provide insights on the impact of culture and acculturation on health behaviors among pregnant immigrant Latinas in Watsonville, California. A greater understanding of these factors will assist health educators in designing more practical and culturally appropriate health education and promotion interventions for immigrant Latinas in order to decrease gestational weight gain, gestational diabetes, and overweight and obesity within the Latino community.

Past research has focused on inadequate weight gain. However, due to the current obesity epidemic, particularly among Latinas of childbearing age, attention has shifted to excessive weight gain during pregnancy. As more children grow up in households with immigrant Latina women of Mexican descent, it is critical to understand how and why

cultural contextual factors influence maternal behaviors (Hernandez, 2004; Lindsay, Sussner, Greaney, & Peterson, 2009).

Some studies have focused on macro-level influential factors and long-term outcomes to improve physical activity level instead of interpersonal and intrapersonal influential factors that may influence short-term (and, ultimately long-term) attitudes, beliefs, and behaviors (Everette, 2008; James, Fowler-Brown, Raghunathan, & Hoewyk, 2006). Other studies have simply compared minority women with White women (Sharpe et al., 2008; Shieh & Weaver, 2011).

Research Question

In this study, I explored the following question:

RQ: What are the effects of culture on diet, physical activity, and weight gain during pregnancy among Latinas who have immigrated in the last 5 years and who currently live in Watsonville, California?

Theoretical Base

The research question was developed based on the ecological model theory (EMT) to examine how culture can have a wide range of influences on the individual. Bronfenbrenner (1974) believed that life was a scientific undertaking. Bronfenbrenner consequently developed the EMT in the 1970s to define and understand human development within the context of the systems of relationships that form a person's environment. The EMT comprises five socially organized subsystems that help to support and guide human growth: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (see Figure 1). The microsystem refers to the immediate environment where the developing person experiences direct contacts and influences such as home or

school. Thus, the developing person has a consistent influence on and is influenced by the immediate environment and individuals, so all relations become bidirectional (Bronfenbrenner & Mahoney, 1975). The mesosystem refers to the interrelations among two or more settings in which the developing person actively participates such as family, work, and social life (Bronfenbrenner, 1975). Essentially, this layer comprises the interrelation between two or more environments. The mesosystem entails bidirectional influences among all participants in this system (Bronfenbrenner & Mahoney, 1975). The exosystem refers to one or more settings "that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what happens in the setting containing the developing person" (Bronfenbrenner & Mahoney, 1975, p. 25). In other words, external environments do not directly interact with the developing individual, but can influence the developing person (Bronfenbrenner & Mahoney, 1975). For example, a state or local law or policy will influence individuals' behaviors. This layer has a unidirectional influence that may potentially have direct or indirect impacts on the developing person (Bronfenbrenner & Mahoney, 1975). Bronfenbrenner (1975) referred to this system as the setting in which a developing person does not participate or have influence. The macrosystem refers to the institutional patterns of culture such as the economy, customs, and bodies of knowledge (Bronfenbrenner, 1994; Bronfenbrenner, 1999). This fourth layer can be considered the "social blue print" of a culture (Bronfenbrenner & Mahoney, 1975; Bronfenbrenner, 1995; Bronfenbrenner, 1999). It consists of a unidirectional influence on the developing person. As Bronfenbrenner and Mahoney (1975) have indicated:

> The macrosystem refers to consistencies, in the form and content of lower-order systems (micro-, meso-, and exo-) that exist, or could exist, at the level of the subculture or the culture as a whole, along with any belief systems or ideology underlying such consistencies. (p. 26)

Furthermore, this layer consists of embedded overarching values and beliefs, resources, and opportunities (Bronfenbrenner & Mahoney, 1975). The chronosystem represents a time-based dimension that influences the operation of all levels of ecological systems (Bronfenbrenner & Mahoney, 1975). The chronosystem can refer to the short- and long-term time dimensions of individuals over a lifespan (Bronfenbrenner & Mahoney, 1975). It may be represented by both day-to-day and year-to-year developmental changes that occur (Bronfenbrenner & Mahoney, 1975). The chronosystem refers to the patterning of environmental events and transitions over the life course (Bronfenbrenner & Mahoney, 1975); for example, the disruptive effects of a divorce or death.

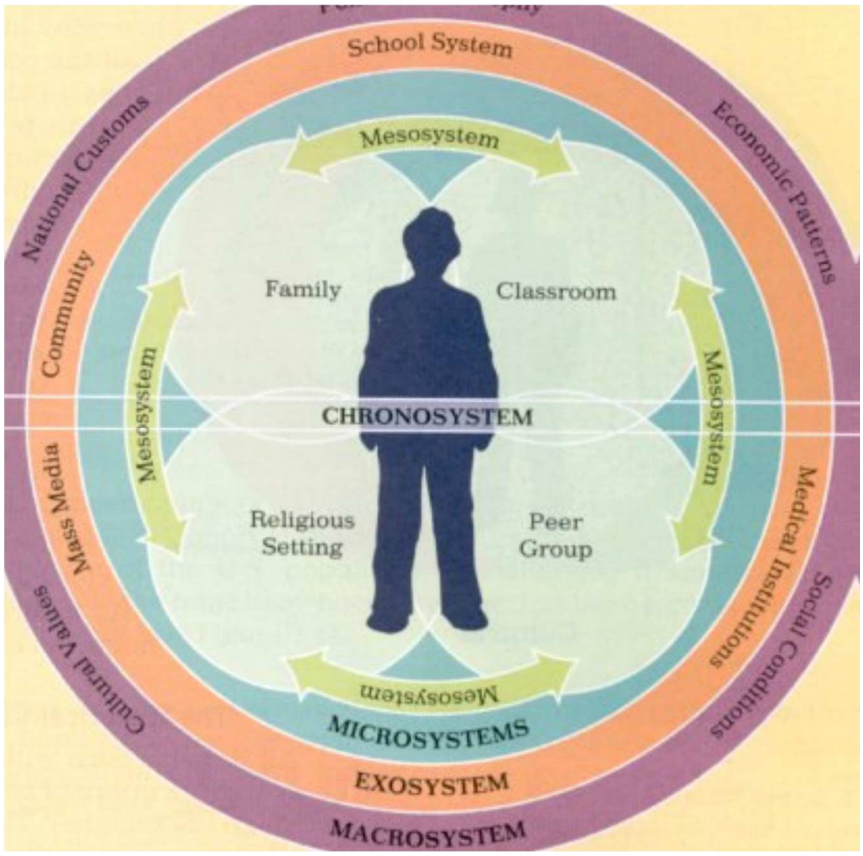

Figure 1. Ecological model theory. Copyright by the University of Wisconsin-Extension, Cooperative Extension (2004). Reprinted with permission.

The EMT enables the researcher to examine interactions between individuals and their environment, and to determine what stimulates the relationship for the individuals' development such as roles, norms, and relationships. Bronfenbrenner (1979) indicated that the most important elements in the environment that influence human development are those that "have meaning for the person" and that what is important to understand is "the environment as it is perceived rather than as it may exist in objective reality" (p. 4). Bronfenbrenner and Morris (1998) indicated the role of the environment and its relation in the following passage: "the developing person is embedded in a series of environmental systems that interact with each other and with the individual to influence

development; development ecology through space and time, future perspective; bio-ecological model from a life course perspective" (p. 997). Overall, the EMT shows that environmental forces influence and enable human behavior to develop from objectively-measured, objective conditions and events occurring in the life of the developing person (Bronfenbrenner, 1979, 1985). Each system is rooted in certain core principles or themes concerning the interrelations among environmental conditions and human behavior and well-being.

The EMT provides a basis to examine and analyze how human behavior is influenced by culture as it intertwines with the different systems that interact with the individual. The ecological perspective recognizes that health behaviors such as gestational weight gain are influenced at multiple levels. Therefore, I used the EMT to guide the development of interview questions to examine the role of culture on diet, physical activity, and weight among pregnant immigrant Latinas in order to develop an understanding of the power of culture on women's health.

Nature of the Study

In this phenomenological study, I conducted interviews with immigrant Latinas of Mexican descent who met the inclusion criteria. Although face-to-face interviews are intensive due to scheduling and logistical planning, they provide an opportunity for a free exchange of conversation and more detailed responses. I recruited 10 pregnant immigrant Latinas (18 years or older) of Mexican origin in Watsonville, California, from local community-based organizations, faith-based organizations, and businesses. Participants had to meet the following eligibility requirements to participate in the study: immigration to the United States within the last 5 years, self-reported ethnicity as Latinas of Mexican

origin, were pregnant, planned to keep the baby after delivery, planned to remain in the Watsonville area during the study period, had no active history of substance use or psychiatric illness, had no restrictions in terms of diet or exercise, and had no critical medical conditions. I conducted the interviews in person in the participants' preferred language. However both Spanish and English interview questions were available. The primary instrument in this study was an in-depth, semi-structured interview guide (see Appendices A and B). It included open-ended questions in order to avoid imposing existing constructs on the participants and biasing their responses. The interview guide was reviewed by a subject matter expert panel and piloted with two immigrant pregnant Latinas. Based on feedback obtained after the pilot, the interview guide did not need to be revised. At the beginning of each interview, I provided participants with a general introduction and an overview of the confidential and anonymous nature of the study. Each participant received a $20 gift card incentive for doing the interview.

The participants' interviews allowed me to explore how culture and acculturation may have influenced Latinas' health behaviors during their pregnancy. For example, women were asked about their daily activities, ranging from physical activity to food consumption. Inquiring about their health behaviors and cultural and acculturation practices enabled me to develop an understanding of how they took care of their health during pregnancy. My aim was to learn about the types of foods they consumed, how much they consumed, the type and duration of physical activity, and the different health implications during pregnancy of the process of becoming incorporated into American culture, resulting from their newly adopted behaviors. My goal was thus to learn whether

the process of becoming incorporated into American society had different health implications for immigrant Latinas during pregnancy.

Definition of Terms

Acculturation: The overall process of cultural involvement comprising the following subcomponents: (a) the extent to which an individual or group retains culture-of-origin involvement; and (b) the extent to which host culture involvement is established (Smokowski et al., 2008).

Calorie balance: "The balance between calories consumed in foods and beverages and calories expended through physical activity and metabolic processes" (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010, p. 5).

Culture: "Myriad social identities that impact, and are impacted by, individual and environmental contexts. These include, but are not limited to, ethnicity, gender, religion, socioeconomic status, geographic region, sexual orientation, and disability status" (Townley, Kloos, Green, & Franco, 2011, p. 70). Culture can be dynamic and stable; although cultural beliefs, values, and traditions change over time, individuals and societies typically change together (Townley et al., 2011). Overall, culture is shared experiences and meanings among groups of individuals (Townley et al., 2011).

Cultural diversity: "An inclusion of differences in language, race, ethnicity, values systems, sexual orientation, and country of origin" (Parrish et al., 2012, p. 221).

Eating pattern: "The combination of foods and beverages that constitute an individual's complete dietary intake over time" (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010, p. 3)

Gestational diabetes mellitus (GDM): Any degree of glucose intolerance with onset or first recognition occurring during pregnancy (American Diabetes Association [ADA], 2004)

Immigrant: A person who migrates into a different environment/country to which they are not native in order to settle there as permanent residents or future citizens (Taylor, Lopez, Martínez, & Velasco, 2012).

Latinas: A woman of Latin American origin or descent (Morales, Murga, & Sanchez, 2013). Latinas refers to individuals whose cultural and ethnic heritage originate from varying mixtures of Mexican, Cuban, Puerto Rico, South or Central American, or other Spanish-speaking countries, regardless of race (Morales et al., 2013; Taylor et al., 2012).

Latino cultural values: An informed set of beliefs and attitudes that are associated with and promote behaviors such as the following:

- *Comadre/compadre:* Describes the relationship between the parents and godparents of a child. The traditional coparenting system of *comadres* and *compadres* is established when the child is baptized or is part of a religious celebration such as confirmation, first communion, *quinceañera* (a ceremony that celebrates the transition from girlhood to young womanhood), or weddings (Comas-Diaz, 2013). The bond between *comadres* and *compadres* is culturally anchored in *familism* (Comas-Diaz, 2013). Among *comadres,* a female support network and a special bond is established. Often, *comadres* share errands, gossip, and childcare and support each other on a daily basis.

Among *compadres*, a male bond is established as well, but with a male engagement focus.

- *Confianza:* Individuals are invested in establishing relationships that are based on reciprocal trust. Moreover, *confianza* "can be understood when someone expresses his or her deeper feelings only to an inner circle of familiar confidants" (Adames, Chavez-Dueñas, Fuentes, Salas, & Perez-Chavez, 2014, p. 153).
- *Familismo:* The value and status of immediate and extended family relationships (Lugo Steidel, & Contreras, 2003).
- *Personalismo:* An interpersonal interaction style that promotes personal connections and relationships (Edwards & Cardemil, 2015).
- *Respeto:* An interactional style that is formal and generally serves as a guide for navigating hierarchical relationships, often within families (Edwards & Cardemil, 2015).
- *Simpatía:* An individual's genuine likeability in general (Edwards & Cardemil, 2015).

Mexican American: Americans of Mexican descent living in the United States (Taylor et al., 2012).

Nutrition: "The science of food, the nutrients and other substances therein, their action, interaction and balance in relation to health and disease, and the processes by which the organism ingests, absorbs, transports, utilizes and excretes food substances" (U.S. National Library of Medicine, National Agricultural Library, National Library of Medicine, & Library Of Congress, 1998, General principles section, para.1).

Obesity: A body mass index of 30 or more (CDC, 2014).

Overweight: A body mass index between 25.0 and 29.9 (CDC, 2014).

Paisano: Someone who shares the same country, population, region, or province (Editors of Larousse Mexico, 2015).

Partera: Midwife (Editors of Larousse Mexico, 2015).

Rebozo: A long, flat garment made of simple and complex textiles that dates back more than 300 years (*El Universal*, 2016). The *rebozo* is used in various ways by women. According to Reyes (personal communication, May 10, 2016), Mexican women use it to cover their heads and shoulders and/or upper bodies. The garment is worn on a daily basis, or for special occasions, depending on the complexity of the textile and colors of the garment (*El Universal,* 2016). In Mexico, it can be used as a form of transportation to cover and transport babies or large bundles such as wood (M. Reyes, personal communication, May 10, 2016). A *rebozo* is considered to be part of Mexico's culture (M. Reyes, personal communication, May 10, 2016).

Sobadora: Folk healer (Editors of Larousse Mexico, 2015).

Assumptions

My assumptions were that participants responded accurately and honestly to the interview questions and that they were willing and wanted to share their experiences with a stranger to improve the health of immigrant Latinas.

Limitations

The results of this study should be considered in light of some limitations. The limitations associated with researcher bias in qualitative research are considered an inevitable part of the evolving understanding and analysis of a phenomenon (Strauss &

Corbin, 1998). The findings of this study related to a nonrandom, purposive sample of pregnant immigrant Latinas in Watsonville, California, who were initially recruited through churches and local retail stores. Purposive sampling and small sample size could be considered limitations regarding the generalizability of qualitative findings.

The opinions and responses of the women participating in the interviews may have been influenced by their lack of recall. Furthermore, the women recruited to participate in this study could have been those who were generally more concerned about maternal and infant health issues and healthy lifestyles. Another limitation of the data was that the participants all lived in Watsonville, California and were not representative of all Mexican immigrant pregnant women in California or in the United States. It is critical to acknowledge that Latinos are not a homogenous group and acculturation processes are likely to vary by migration time frame, socioeconomic status, and origin of nativity. The current study is limited in its capacity to assess acculturation, diet, exercise, weight, and certain demographic and socioeconomic factors.

Delimitations

Participants in this study were delimited to pregnant immigrant Latinas of Mexican descent who had immigrated to the United States within the past 5 years, who were 18 years or above, and who were living in Watsonville, California at the time of the study.

Significance of the Study

For this study, I examined the ways in which culture and acculturation may have influenced weight, diet and physical activity levels among pregnant immigrant Latinas living in Watsonville, California. The study will provide a unique contribution to the

literature and will address timely concerns relating to Latina maternal and infant health, gestational weight gain, and gestational diabetes in light of the changing demographics in California.

Summary

Latinas in California are the fastest growing population group with ongoing high birth and immigration rates. Further, the majority of Latinas entering pregnancy are overweight or obese (CDPH, 2012). Pregnant Latinas continue to gain weight at a higher rate than other ethnic groups and put themselves and their infants at risk for chronic diseases (Tovar et al., 2010). A lack of physical activity and high calorie intake on a daily basis are contributing factors to high gestational weight gain and being overweight or obese (Herring, Rose, et al., 2012; Herring, Henry, et al., 2012). One factor that appears to be associated with diet and other health behaviors is acculturation (Bolstad & Bungum, 2013). Many factors influence maternal and infant health outcomes within the Latino community such as individual, social, and environmental factors. Latino acculturation and health research outcome is very complex and not well understood. Some evidence indicates that acculturation has negative effects on maternal and infant health (Bolstad & Bungum, 2013; Lara et al., 2005). In order to understand the potential influence of culture and acculturation on the diets, exercise and weight of pregnant immigrant Latinas, I interviewed 10 pregnant immigrant Latinas utilizing original interview questions.

This chapter summarizes the background information on obesity, gestational weight gain, physical activity, diet and nutrition, and acculturation activity in the United States and specifically in California. The problem statement and discussion of the study purpose defined inconsistencies in the literature regarding diet, exercise, weight, and

acculturation that have been examined in this study. I have discussed the nature of the study and introduced the research question, and have described the study methodology. I further introduced the EMT as the theoretical basis for the study, providing additional details and explanations relating to the study. In Chapter 2, I further explore the theoretical concepts and provide a more in depth literature review. Chapter 3 provides a detailed explanation of the study methodology, and Chapter 4 presents the results of the research. Finally, in Chapter 5, I interpret the study results, findings, and trends and provide an overall summary of the research.

Chapter 2: Literature Review

Introduction

Given high obesity rates among Latinas, there is a growing concern about excessive gestational weight gain during pregnancy because of the increased risks and implications of this for the health of the mothers and children. For this reason, pregnancy is now considered to be a strong risk factor for new or persistent obesity. The literature review conducted for this study has covered aspects that are known or believed to contribute to gestational weight gain before and during pregnancy among immigrant Latinas, as well those areas that have raised additional questions. Based on this review, I also discuss the effects of acculturation on diet, physical activity, gestational weight gain, and maternal and infant health outcomes, which have become both a social and public health concern. I further discuss the ecological model theory as it relates to a model for research and its applicability to gestational weight gain and maternal and infant health.

Literature Search Strategy

I used the following research databases for my literature review: Academic Search Complete/Premier, Health Sciences, Academic Search Complete, Agricola, EMBASE, ERIC, MEDLINE PsycINFO, PubMed, SAGE, Science Direct, Scopus, SocINDEX, and Web of Science with Full Text. The internet search engine, Google Scholar, was also a source of relevant literature. I searched for the following keywords and terms individually and in combinations: *Latina(s), immigrant Latina(s), Mexican immigrant women, pregnant, exercise, diet, weight gain, ecological model theory, gestational weight gain, gestational diabetes, Latina birth outcomes, pregnancy, obesity, pregnancy outcomes, maternal and infant health, immigrant Latinas, time, acculturation,*

and *physical activity*. Except for a few articles related to the EMT, this literature review was restricted to works published from 2000 to 2016. A number of books written by Bronfenbrenner as a single or coauthor were also included. I also referenced several resources specific to California, in particular those from the California Department of Public Health and California Health Care Services, to provide perspectives relating to California's public health and health care data.

Theoretical Foundation

This research study is grounded in the EMT, which was developed by Bronfenbrenner. The EMT has been used to explain the reciprocal interactions that multiple determinants have on human development and the environment that influences and stimulates emotional, behavioral, and cognitive development (Bronfenbrenner, 1979). Bronfenbrenner (1976, 1981) believed that the EMT would provide knowledge about the environment and on the nature of the development of a person, as opposed to just the characteristics of individuals. Similar to human development, the content of the EMT derives from various disciplines such as biological, psychological, and social sciences (Bronfenbrenner, 1979). Bronfenbrenner (1979) defined the EMT as follows:

> The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings and by the larger contexts in which the settings are embedded. (p. 21)

Moreover, the theory posits that the role of environmental systems on the individual's development dictates how the "development ecology through space and time, future

perspective; bio-ecological model from a life course perspective" could develop (Bronfenbrenner & Morris, 1998, p. 997). The EMT considers a wide range of influential factors such as individuals, family, and societal factors that both contextualize and influence the effects of individuals in specific environmental settings (Bronfenbrenner & Mahoney, 1975; Bronfenbrenner, 1979). Bronfenbrenner (1979) indicated that the meanings of the environment in a given situation are the ones that have an external influence on human behavior and development. The benefits of utilizing the ecological approach to examine human development through environmental systems allows for proper identification of those systems that affect behavior and human development (Bronfenbrenner, 1979). This approach considers the reciprocal relationship between the environment and an individual and the bidirectional influences within and between systems. Bronfenbrenner (1979, p. 22) noted that "the scientifically relevant features of any environment include not only its objective properties but also the way in which these properties are perceived by the persons in that environment."

Overall, the EMT reveals that environmental forces influence the development of human behavior from objectively measured conditions and events occurring in the life of the developing person (Bronfenbrenner 1979, 1985). The most important elements in the environment that influence human development are those that have the greatest meaning for the individual (Bronfenbrenner, 1979). For this reason, it is important to understand how the environment is perceived "rather than as it may exist in objective reality" (Bronfenbrenner, 1979, p. 4). The EMT provides a structure for studying how larger systems may influence behavioral and individual outcomes. In addition, the EMT can potentially provide a means of understanding health behavior and outcomes as a result of

a dynamic interaction between personal, social, and environmental forces. More specifically, it can be used to examine how culture influences and impacts on health behaviors and individual change.

Literature Review

Obesity and Overweight

Obesity has become a major public health crisis. In the United States, obesity affects all population groups regardless of their socioeconomic backgrounds. However, there are substantial disparities among racial/ethnic minorities that vary on the basis of age, sex, and socioeconomic status (CDC, MMWR, 2013). According to CDC MMWR (2013, p. 120), "since 1960, the prevalence of adult obesity in the United States has nearly tripled, from 13% in 1960–1962 to 36% during 2009–2010." This means that more than one-third of adults in the United States (35.7%) are obese (CDC, 2013b). In 2008, the estimated annual medical costs relating to obesity in the United States amounted to $147 billion (Finkelstein, Trogdon, Cohen, & Dietz, 2009). Obesity is highly associated with chronic conditions and overall poor physical health (Sturm, 2001).

Pregnancy is now considered to be a strong risk factor for new or persistent obesity (Herring, Rose, et al., 2012). Maternal obesity is associated with an increased risk for congenital heart defects, the most common type of birth defect (Association of State Public Health Nutritionists, 2013). Fetuses of pregnant women who are overweight or obese are at increased risk of prematurity, stillbirth, congenital anomalies, macrosomia with possible birth injury, and childhood obesity (American Congress of Obstetricians and Gynecologists, 2013c). In addition, there is a concern of potential intrapartum, operative, and postoperative complications and difficulties related to anesthesia

management (American Congress of Obstetricians and Gynecologists, 2013c). Experts have also indicated that obese women are less likely to initiate and sustain breastfeeding (Artal & O'Toole, 2003). Obesity is a growing problem among Latinos regardless of their age, sex, income, or education level (CDC, 2013c). Latinos (particularly those of Mexican descent) have the highest prevalence rates of obesity (40.4%) compared with any other ethnic group in the United States (CDC, 2013c). The prevalence of overweight and obesity is especially high among Latinas of childbearing age (Flegal et al., 2010).

According to the findings of the California Department of Public Health, Maternal and Infant Health Assessment Survey (2011), Latinas had the highest rates of being overweight or obese before pregnancy (56.1%) compared with Blacks (44.2%), Whites (37.6%), and Asian/Pacific Islanders (20.8%). With regard to excessive weight gain during pregnancy, the findings of this survey were that Latinas had high rates (41.3%) compared with Asian/Pacific Islanders (29.8%), but they had low rates compared with Whites (53.4%) and Blacks (46%). Although Latinas did not have the highest excessive weight gain during pregnancy, the patterns of being overweight or obese and excessive weight gain before and during pregnancy could potentially put mothers and infants at risk for health complications. When a woman's body mass index (BMI) rises before and during pregnancy, there is an increased risk of fetal death, stillbirth, or infant death. Severely obese women have the highest risk, and even "modest" increases in BMI are associated with adverse mother and infant health outcomes. This is discussed in more detail below.

Reported findings of the California Women's Health Survey on women of reproductive age revealed that many Californian women were not at an optimal

preconception weight. Moreover, those most likely to be overweight or obese were Latinas and other women of color (CDHCS & CDPH, 2010). For example, non-White women had a significantly higher prevalence of combined overweight and obesity (61.6%) than White or non-Hispanic women (34.4%, chi-square test $p < 0.0001$; CDHS & CDPH, 2010). Hispanic women had twice the prevalence of combined overweight and obesity (76.8%) compared with nonHispanic women (37.7%; chi-square test $p < 0.0001$; CDHS & CDPH, 2010).

Studies have found that obesity and diabetes are common among immigrants, with Mexicans and Central Americans being more likely to be overweight or obese compared with other immigrants and White non-Latinos (Wallace & Castaneda, 2010). Mexican (73.8%) and Central American (68.6%) immigrants are more likely to suffer from excess weight (Ramírez García et al., 2013). In comparison to Blacks, excess weight among Mexicans is more moderate, since they are reported to more likely be overweight (41%) than obese (25%) or extremely obese (8%) (Ramírez García et al., 2013). Among the Mexican-born population, it is of concern that obesity and extreme obesity affect women more than men at 35% and 30%, respectively (Wallace & Castaneda, 2010; Ramírez García et al., 2013). Overweight and obesity tend to affect Mexican immigrant women at early ages: 61% of those aged 18–24 years and 72% of those aged 25–34 years reportedly suffer from this problem, with these rates exceeding those of other immigrants and non-Hispanic Whites born in the United States (Wallace & Castaneda, 2010). Obesity can lead to other chronic conditions such as diabetes and cardiovascular diseases. For example, diabetes is more common among Mexican immigrant women who have lived longer in the United States (9.1%), compared with 4%

of recently-arrived Mexican immigrant women diagnosed with diabetes (Wallace & Castaneda, 2010). Experts have hypothesized that these results may suggest poor eating habits and lack of physical activity within the immigrant and U.S. born Latino population (Wallace & Castaneda, 2010). Behaviors that increase the risk of obesity and overweight include poor diets and lack of physical activity. According to Ramírez García et al. (2013):

> Almost half (45%) of undocumented residents and one-third of U.S.-born citizens fall into the lowest consumption quartile for healthy foods (fruits and vegetables), while one-third of both undocumented and U.S.-born residents are in the highest quartile for unhealthy food consumption (e.g., sugar soda, fast food, and sugary desserts). Obesity rates are similar for U.S.-born and undocumented residents (about one-quarter of each), and lower for other immigrant groups. Overall, immigrants have favorable health behavior patterns, although undocumented immigrants are not as favorable as other immigrant categories. (p. 63).

Among adults, the difference in the overweight status by acculturation seems to be detectable usually in a range of 10 to 21 years of residence in the United States (Oza-Frank & Cunningham, 2010).

Gestational Weight Gain

Studies have linked higher gestational weight gain with greater postpartum weight retention and a high obesity risk (Gardner et al., 2011; Josefson, 2011). Herring, Rose, et al., (2012) has presented evidence from human and animal studies linking over-nourishment and under-nourishment during pregnancy to maternal and child obesity. Lower gestational weight gain has both short- and long-term benefits for the mother and

child. Lower gains can potentially help protect against postpartum maternal weight retention and obesity (Herring, Rose, et al., 2012). Excessive gestational weight gain in mothers creates a uterine environment in which the baby is exposed to developmental over-nutrition from an early stage (Herring, Rose, et al., 2012; Josefson, 2011). According to Josefson (2011), this can lead to greater fat mass in the newborn baby and can potentially affect the childhood body mass index (Josefson, 2011). Even after immigration to the United States, Mexican women are more likely than other groups to have insufficient weight gain during pregnancy, with nearly 9% of Mexican-born mothers reporting a weight increase during pregnancy of less than 11 pounds. This proportion is higher than that for other immigrant women and for non-Hispanic Whites born in the United States (Wallace & Castaneda, 2010).

Under-nutrition has also been linked to obesity, cardiovascular disease and diabetes (Eriksson, Forsen, Osmond, & Barker, 2003; Herring, Rose, et al., 2012). Under-nutrition puts the baby in a "survival phenotype" that supports early life survival, but has negative consequences during the period from adolescence through adulthood (Herring, Rose, et al., 2012). Babies exposed and born into an environment of poor nutrition can manifest "catch-up" growth or rapid weight gain as they develop (Herring, Rose, et al., 2012). This type of accelerated growth affects glucose metabolism, lipids, and blood pressure in adolescents who were born underweight (Herring, Rose, et al., 2012).

Experts have indicated that genes and behaviors are contributing factors to the problem, but maternal over-nourishment appears to have a direct influence on offspring physiology, including appetite, metabolism, and activity levels (McMillen, Edwards, Duffield, & Muhlhausler, 2006). According to Catalano (2010), maternal prenatal over-

nourishment may contribute to an increase of fetal adipose tissue deposition. The adipocyte (a major energy-storing tissue) number, a major determinant for fat mass in adults, is set during the first years in life, but with excess fat formed in early life, this can potentially result in lifelong excess adiposity (Catalano, 2010; Herring, Rose, et al., 2012; Spalding, et al., 2008; Sun, Kusminski, & Scherer, 2011).

GDM is defined as any degree of glucose intolerance with onset or first recognition occurring during pregnancy (ADA, 2004). GDM is associated with increased maternal and infant complications, including infant macrosomia, birth trauma, hypoglycemia, and cesarean section (C-section) (Kim, et al., 2013). If a woman has pre-existing diabetes (type 1 or type 2) before pregnancy, blood sugar that remains high can trigger or worsen certain health problems, including high blood pressure, preeclampsia, kidney disease, nerve damage, heart disease, and blindness (CDC, 2012). The chances of miscarriage, preterm birth, stillbirth, or C-section are also increased (CDC, 2012). The offspring of mothers with GDM are at increased risk for metabolic syndrome and type 2 diabetes developed during adulthood (Kim at el., 2013). Approximately 7% of all pregnancies are complicated by GDM, resulting in more than 200,000 cases annually (ADA, 2004). Of these women, 20–50% has a chance of developing type 2 diabetes during the 5 to 10 years following their pregnancies (CDHCS & CDPH, 2009). GDM is more common in women who:

> have a first degree relative with diabetes; are obese; are American Indian, African American, Latino, or Asian/Pacific Islander; have had a previous baby weighing more than nine pounds; had a previous baby that died before birth (stillbirth);

> have polycystic ovarian syndrome; or have chronic use of medications (e.g., steroids) that increase the risk of diabetes. (CDHCS & CDPH, 2009, p. 17)

GDM is becoming increasingly prevalent, and currently affects between 7% and 18% of pregnancies in the United States (University of California San Francisco, Center for Vulnerable Populations, 2013). Women with diabetes have a higher risk for pregnancy complications compared with women without diabetes (CDC, 2012). Maternal diabetes can cause fetal death and congenital anomalies, especially when GDM is poorly controlled (Association of State Public Health Nutritionists, 2013). In women with pre-gestational diabetes, "poor dietary control of blood sugar during critical periods of organogenesis significantly increases the risk of birth defects, particularly cardiac and neural tube defects" (ASPHN, 2013, p. 2). Experts have indicated that poor dietary practices among pregnant women of Mexican descent are a direct result of acculturation in the United States (CDHCS & CDPH, 2009). According to the CDHCS and CDPH (2008), increased time of residence in the United States is associated with "lower intakes from food of fiber, folate, iron, and zinc among pregnant women of Mexican descent" as opposed to pregnant Mexican-born immigrant women with diets high in calories, fiber, vitamin A, vitamin C, vitamin E, folate, calcium, and zinc.

In California, the overall prevalence of GDM (5.3%) is increasing, with a pronouncedly higher prevalence among Latinas (5.7%) and Asians (8.5%) compared with non-Hispanic Whites (4%) (University of California San Francisco, Center for Vulnerable Populations, 2013). The findings of the California Department of Public Health, Maternal and Infant Health Assessment Survey (2012) revealed that Latinas had

high rates of diabetes or gestational diabetes (12.2%) compared with Whites (6.6 %) and Blacks (7.5%) (CDPH, 2012).

La Opinión, the largest Spanish-language newspaper in the United States, published d a snapshot on how GDM impacted a 27 year-old Latina mother in Pomona, California, who had developed GDM during her first pregnancy 6 years ago (Melara, 2014). This woman believed that her last miscarriage in 2012 was caused by her diabetes (Melara, 2014). In 2013, pregnant again, the woman enrolled in a local nutritional education program ("California Diabetes and Pregnancy Program Sweet Success") to change and improve her nutrition because of her diabetes (Melara, 2014). Every year, 80 to 100 pregnant Latinas like this woman are referred to California Diabetes and Pregnancy Program Sweet Success to improve their nutrition to ensure optimal care for them and infants. Consequently, only 8% of the participants' infants are born with diabetes-related health issues (Melara, 2014). Dr. Hellen Rodriguez, a gynecologist at the Pomona Valley Hospital Medical Center and a longtime physician, refers Latinas to the "Sweet Success" program, emphasizing the following messages conveyed to pregnant Latinas. First, high sugar levels hurt the baby. Second, once a woman knows she has diabetes, she should learn to control it. Third, if a woman develops GDM, she will develop diabetes at some point in her life (Melara, 2014).

The American Congress of Obstetricians and Gynecologists (2013a & 2013c) recommends that all prenatal patients receive counseling on weight gain, diet, and exercise. There is evidence that counseling about diet, exercise, and weight gain may currently be inadequate in prenatal and primary care settings, with not all pregnant

women receiving sufficient advice regarding weight gain recommendations or dietary quality (Stotland, Tsoh, & Gerbert, 2012).

The evidence suggests that "poor eating habits acquired in the United States, combined with the effects of inadequate medical monitoring, may encourage or accelerate the development of diabetes within the Latino population" (Ramírez García et al., 2013, p. 52). Pregnant women with GDM are about seven times more likely to develop type 2 diabetes after giving birth and have a 35 to 60% chance of developing diabetes during the 5 to 10 years following birth (University of California San Francisco, Center for Vulnerable Populations, 2013). Hospital costs for women with GDM were reported to be 18% higher than those for normal deliveries, and delivery costs for women with diabetes were considerably higher (55%) than those for normal deliveries (University of California San Francisco, Center for Vulnerable Populations, 2013).

GDM also affects the health of babies. Infants born to women with diabetes (type 1 or type 2) have a higher risk for adverse birth outcomes such as brain, spine, and heart defects; increased birth weight; nerve damage to the shoulder during delivery; low blood sugar after birth; and increased chances of overweight, obesity, and/or diabetes later in life (CDC, 2013a). GDM can cause the fetus to grow very large (about 9 pounds or more). A baby that is too large will have a difficult passage through the birth canal and can potentially suffer from nerve damage to the shoulders during birth (CDC, 2013a).

In 2009, for the first time in nearly two decades, the gestational weight gain guidelines as determined by the IOM were updated, taking into account the different perspectives that affect women before, during, and throughout the first year after delivery (IOM, 2012). The revised guidelines were developed for short to tall women and for

diverse women belonging to different racial and ethnic groups. According to the IOM (2012) guidelines, underweight women (pre-pregnancy body mass index (BMI) less than 18.5) should gain between 28 to 40 pounds; women of normal weight (pre-pregnancy BMI 18.8–24.5) should aim to gain between 25 to 35 pounds; overweight women (pre-pregnancy BMI 25.0–29.9) should gain between 15 to 25 pounds; and obese women (pre-pregnancy BMI ≥ 30.0) should gain between 11 to 20 pounds (IOM, 2012). Less than one-third of pregnant women achieve guideline-recommended gains, with the majority gaining above the IOM recommended weight levels (Herring, Rose, et al., 2012). According to Rasmussen and Yaktine (2009), who edited a publication of the IOM and Institute of Medicine & National Research Council Committee of the National Academies, appropriate weight gain, diet, and exercise are important factors for a pregnancy outcome and the long-term health of mother and child.

In a recent study, only 34% of women living in the United States gained the IOM recommended amount of weight during pregnancy (Davis, Hofferth, & Shenassa, 2014).

> Infants born to underweight, normal-weight, and overweight women with inadequate GWG [gestational weight gain] had odds of mortality during infancy that were 6.18, 1.47, and 2.11 times higher, respectively, than those of infants born to women with adequate GWG. Infants born to obese women with excessive weight gain had a 49% decreased likelihood of mortality (Davis et al., 2014, p. S90–91).

Moreover, the study's findings support the conclusion that inadequate GWG is an independent risk factor for infant mortality (Davis et al., 2014). Moreover, the results support the IOM position that GWG and pre-pregnancy BMI together have important

influences on birth outcomes (Davis et al., 2014). Only 30 to 40% of American women actually gain weight within the IOM recommended ranges (Davis et al., 2014).

Birth Outcomes

Culture, race, and socioeconomic factors such as poverty and lack of access to comprehensive health care may contribute to birth outcomes. Acculturation is emerging as an important variable that should be considered when providing health care to Mexican immigrant childbearing women and their families (Callister & Birkhead, 2002). In the United States, there are 52 million Latinos, making them the largest ethnic or racial minority (United States Census Bureau News, 2012). In 2011, "19.3 million women, representing 15.8 percent of all women residing in the United States, were immigrants, defined as foreign-born and not a U.S. citizen at birth" (U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau [U.S., HRSA, MCAH], 2013, p. 42). Over half of all U.S. immigrants are from Latin America (53.1%), followed by Asia (28.2 %) and Europe (12.1%) (U.S., HRSA, MCAH, 2013). Studies have shown that immigrants tend to be younger with lower levels of education and income than the general U.S. population, even though they have higher levels of labor force participation (Wallace & Castaneda, 2010; U.S., HRSA, MCAH, 2013).

Studies have further indicated that immigrants in general are often considered to be healthier than the U.S.-born population (Wallace & Castaneda, 2010). Latinas, and particularly Mexican immigrant women, are not likely to develop diseases during pregnancy (i.e., hypertension), or to have adverse birth outcomes such as low birth weight, poor presentation during childbirth, and congenital anomalies (Albrecht, Clarke,

Miller, & Farmer, 1996; Wallace & Castaneda, 2010; Frisbie & Song, 2003). However, Mexican and other immigrant women are more likely to develop GDM during pregnancy (Wallace & Castaneda, 2010). Mexican immigrant women are more likely to have children at an early age. For example, a study found that nearly 40% of Mexican-born women who gave birth were under 25 years of age. This proportion was higher than among non-Hispanic U.S. born women (Wallace & Castaneda, 2010).

Women of reproductive age can influence their birth outcomes through their behavioral health practices (e.g., diet and physical activity) before and during pregnancy. Evidence has suggested that "high and low gestational weight gains are independently associated with an increased risk of childhood obesity, suggesting that influences occurring very early in life are contributing to obesity onset" (Herring, Rose, et al., 2012, p. 195). Excessive gestational weight gain has been linked to an intergenerational "vicious cycle" of obesity as obese/overweight women deliver large neonates and macrosomic babies (newborns with excessive birth weights), who will most likely become obese themselves (Artal et al., 2010; James et al., 2006). Gestational weight gain becomes a risk factor for offspring obesity, with higher levels of adiposity or BMI reported during infancy, childhood and adulthood; and maternal and fetal complications that can potentially have significant lifelong consequences (Artal et al., 2010; Gardner et al., 2011; Shieh & Weaver, 2011). For example, mothers can create a uterine environment for their babies through over nutrition during development that can have adverse effects long after birth. For the mother this can mean retention of weight after pregnancy and development of chronic diseases. At the same time, too little weight gain can also be associated with adverse infant outcomes (Shieh & Weaver, 2011). According

to Shieh & Weaver (2011), pregnant women who gain less than 22 pounds by their 38th week are almost three times more likely to have pre-term births compared with those women with adequate weight gain of between 22 to 44 pounds. Gestational weight gain, both low and high, has been linked to socioeconomic conditions and obesity due to age, BMI, socioeconomic status, and ethnic and cultural background (Artal et al., 2010; James et al., 2006).

Physical Activity

Physical activity is "any body movement that works your muscles and requires more energy than resting" (U.S. Department of Health & Human Services, National Heart, Lung, and Blood Institute, 2014, para. 1). According to the Physical Activity Guidelines of 2008 for Americans, individuals need to do aerobic and muscle-strengthening physical activity each week to improve their health (CDC, 2012). Healthy women should exercise for at least 2 hours and 30 minutes per week, and they should engage in moderate intensity aerobic activity such as brisk walking before and after their pregnancies (CDC, 2012). According to Artal and O'Toole (2003) and the DHCS & CDPH (2009), it is recommended that healthy pregnant women and women of childbearing age should be physically active for at least 30 minutes on most days; and should avoid activities entailing a high risk of falling or sustaining abdominal trauma activities, for example, soccer, basketball, or surfing (CDHCS & CDPH, 2009, p. 7). In fact, pregnant women are encouraged to engage in regular and moderately intense physical activity as they did prior to pregnancy because of the associated health benefits during pregnancy (CDHCS & CDPH, 2009). In general, participation in a wide range of recreational activities is safe with the exception of high contact sports such as soccer or

basketball, as these can potentially put both the mother and fetus at risk (Artal & O'Toole, 2003). Previously inactive women should seek medical evaluations during pregnancy before beginning any type of exercise regime. Being physically active during pregnancy may help to prevent GDM, excessive weight gain, pregnancy induced hypertension, thrombosis, and lower back pain (Artal & O'Toole, 2003; CDHCS & CDPH, 2009). Other benefits of being physically active include reduced stress, the ability to cope with postpartum depression, shorter labor, and enhanced feelings of physical and emotional wellbeing (CDHCS & CDPH, 2009). Perhaps the greatest benefit for women who exercise during pregnancy is the likelihood of continued exercise beyond the 9 months of pregnancy (CDHCS & CDPH, 2009). The American Congress of Obstetricians and Gynecologists (2013b) and the ADA (2014) recommend exercising regularly, consuming healthy foods, and if needed, taking medication to keep blood glucose level under control and to help treat GDM.

In the 2004 California Women's Health Survey, 39.7% of Californian women reported meeting the physical activity guidelines, with no differences according to educational level or poverty-related factors (California Department of Health Services, Office of Women's Heath, 2006). Women with children younger than the age of 18 within their household were less likely to meet the activity recommendations (37.8%) than women who had no children (51.7%) in their households (California Department of Health Services, Office of Women's Heath, 2006). Women of child-bearing age (18 to 44 years) were less likely to meet activity recommendations (38.2%) than women aged 45 years and above (41.8%) (California Department of Health Services, Office of Women's Heath, 2006).

Proper diet and a healthy weight gain during pregnancy are critical to ensure fetal growth and proper nutrients for the mother and baby. However, high gestational weight gain is not necessarily better for the mother and baby (Herring, Henry, et al., 2012). The lack of physical activity and high calorie intake on a daily basis are contributing factors to being overweight, obese, and to high gestational weight gain (Herring, Henry, et al., 2012). Across the United States, nearly six in ten Latinas are not physically active, making it harder to maintain a healthy weight (LULAC, 2013). Additionally, three in four Mexican American women are overweight or obese in the United States (LULAC, 2013). Mexican American women are more likely to have a low-income status compared with their White counterparts (CDC, 2013a). Higher income women are less likely to be obese than low-income women (CDC, 2013b).

Studies suggest that Latino immigrants tend to be more physically active as part of their everyday life in their home countries and to experience a more sedentary lifestyle (e.g., walking less for errands, greater reliance on transportation, and watching television) in the United States (Fitzgerald, 2010). Among immigrants, physical activity is reduced in the United States due to busier lifestyles, a different climate, and neighborhood safety concerns (Fitzgerald, 2010). Physical activity may reduce the risk of maternal disorders during pregnancy, but sparse data exists on the correlates of physical activity in pregnant Latinas (Chasan-Taber, 2012). These findings suggest that sociodemographic indicators, geographic location, acculturation, health, and behavioral correlates of physical activity may vary among Latinas.

Physical activity is considered to be safe for most women during pregnancy and helps improve maternal fitness and birth outcomes. However, there is evidence that

young women, and women without partners who are less educated or who have low incomes are less likely to receive information about prenatal physical activity (Cannella et al., 2010). Women who were informed about physical activity and about the benefits and risks of inactivity and exercise techniques had more favorable attitudes toward being physically active (Cannella et al., 2010, p. 240). These findings suggest that providing key types of information on the benefits of prenatal physical activity can improve attitudes and behaviors toward physical activity (Cannella et al., 2010).

Latinas know that being physically active is good for their health and well-being, but they lack social support to stay physically active every day in the United States (López, Bryant. & McDermott, 2008). Regular structured exercise is not a top priority in the lives of half of the Mexican female immigrant population (49%), representing an additional risk factor for cardiovascular disease (Wallace & Castaneda, 2010). Social support can promote and sustain healthy lifestyles such as eating and physical activity patterns. Thornton et al. (2006) reported that pregnant and postpartum Latinas who had recently immigrated could benefit from community-based, family-oriented interventions, providing social support for healthy lifestyles. Social support available to recent immigrant Latinas during pregnancy and postpartum periods can improve gestational weight gain since this is heavily influenced by cultural beliefs. Thornton et al. (2006) found that husbands and female relatives were the primary sources of emotional, instrumental, and informational support for weight, diet, and physical activity-related beliefs and behaviors among Latina participants in their study. In addition, Latinas have reported that the absence of their mothers, female relatives, or friends to provide

childcare, companionship during exercise, and advice about food limited their ability to make healthy lifestyle choices (Thornton et al., 2006).

Evenson et al. (2009) applied a socioecological framework to understand the barriers that prevented Latina, Black and White pregnant women from being physically active. Eighty-five percent reported an intrapersonal barrier to physical activity, of which almost two-thirds were health-related (e.g., tiredness, lack of sleep, shortness of breath, musculoskeletal problems, and concern with pregnancy complications); 2% reported an interpersonal barrier (e.g., lack of social support, overly protective family members, conflicting advice from others, and isolation); and 3% reported neighborhood or environmental barriers, including weather, season of the year, and lack of outdoor space to be active (Evenson et al., 2009). One Latina participant with a high BMI indicated that she "used to feel very free when [she] was able to walk and to run and here [in the United States] now with the pregnancy because in the sun [she] get[s] very tired. [She has] to be at home" (Evenson et al., 2009, p. 368). Another Latina participant with a high BMI indicated that she follows her "mother's recommendations […] because the doctors don't tell you exactly why. They say, 'Don't do too much movement.' But it's not concrete. I want my mother to tell me more concrete things'" (Evenson et al., 2009, p. 370).

Diet and Nutrition

During pregnancy, adequate nutrition is extremely important for both maternal and fetal health (CDHCS & CDPH, 2008). To ensure adequate fetal growth and development, a balanced nutritional diet and gradual weight gain is required during pregnancy (CDHCS & CDPH, 2008). In addition, good nutrition during pregnancy helps prepare women for breastfeeding (CDHCS & CDPH, 2008). Malnutrition can negatively

affect pregnancy outcomes, including fetal survival and growth (CDHCS & CDPH, 2008). Malnutrition is a result of eating either too little, too much, or a diet that lacks essential nutrients (CDHCS & CDPH, 2008). Maternal obesity is a risk factor for maternal and fetal malnutrition (CDHCS & CDPH, 2008). As previously mentioned, obesity occurs when excessive calories are consumed relative to energy expenditure (CDHCS & CDPH, 2008). Moreover, studies have found that babies born to women who were overweight or obese before pregnancy were less likely to be breastfed, and were at higher risk for infant death and certain birth defects such as neural tube defects (CDHS & CDPH, 2010).

Latino immigrants have not demonstrated favorable dietary habits in the United States (Ramírez García et al., 2013). In the study by Batis, Hernandez-Barrera, Barquera, Rivera, & Popkin (2011), Mexicans in the United States had a greater intakes of saturated fat, sugar, desserts, salty snacks, pizza and French fries, low-fat meat and fish, high-fiber bread, and low-fat milk, as well as decreased intakes of corn tortillas, low-fiber bread, high-fat milk, and Mexican fast food. In addition, the study highlighted the need to discourage critical unhealthful components of the American diet (Batis, Hernandez-Barrera, Barquera, Rivera, & Popkin, 2011). In their "Health Is Power" study, Lee, Mama, Medina, Ho, & Adamus (2012) reported that regardless of ethnicity, women of normal weight engaged in more physical activity, had better fruit and vegetable consumption, and consumed more fat calories than overweight and obese women. Trout, McGrath, Flanagan, Costello, and Frey (2012) have examined the effectiveness of a novel nutrition intervention to increase fruit and vegetable intake among pregnant Latina women. They found that combined fruit and vegetable intake declined in both the control

and intervention groups, suggesting the difficulty of implementing changes based on simply receiving nutritional education about prenatal flavor learning (Trout et al., 2012). The decline was primarily the result of a decrease in vegetable intake, but it was not statistically significant (Trout et al., 2012). In both the comparison and intervention groups, over 74% of the women were eating adequate daily servings of fruit (Trout et al., 2012). Lindsay et al. (2009) found that immigrant Latina mothers (defined as delivering a live baby during the past 48 months and for whom Spanish was their primary language at home) faced numerous barriers to establishing and maintaining healthful eating practices for themselves and their preschool-aged children. The barriers related to culture and social class on families, and as suggested by the EMT, had multiple levels of influence from individual to environmental factors (Lindsay et al., 2009). Harley and Eskenazi (2006) conducted a study in the Central Coast region (Salinas, California) where Watsonville (the research location for this study) is located. They found that Latinas of Mexican descent, who had access to a high level of social support, appeared to avoid the negative impacts of diet quality associated with life in the United States. At the same time, Latinas with access to intermediate or low levels of social support, who had spent their childhoods in the United States, had significantly poorer diets in terms of quality compared with those who had spent their childhoods in Mexico (Harley & Eskenazi, 2006). However, among women with high levels of social support, there was no difference in diet quality according to the country of childhood (Harley & Eskenazi, 2006). Overall, in the case of diet quality, the researchers found that increased social support appeared to prevent some of the negative pregnancy behaviors that accompanied increased time spent in the United States among Latinas of Mexican descent (Harley &

Eskenazi, 2006). These findings may suggest that poor eating habits acquired in the United States may encourage or accelerate weight gain and the development of diabetes within this population (Harley & Eskenazi, 2006; Ramírez García et al., 2013). Diabetes is the fifth leading cause of death within the immigrant as well as U.S. born Latino population (Ramírez García et al., 2013).

Acculturation

Acculturation is defined as the overall process of cultural involvement entailing the following subcomponents: the extent to which an individual or group retains culture-of-origin involvement; and the extent to which the host culture involvement is established (Smokowski et al., 2008). Acculturation, entailing a multidimensional and dynamic development of change, reflects the "process by which immigrants adopt the attitudes, values, customs, beliefs and behaviors of a new culture" (Fuentes-Afflick & Hesson, 2008b, p. 68). Acculturation is typically accompanied by changes in attitudes, behaviors, norms, and values that may influence health behaviors (Kaplan et al., 2001; Page, 2004). It is important to note that there are many phases within the acculturation continuum. Four major categories have been proposed: (1) assimilation refers to complete adaptation to the newer culture and loss of traits from the culture of origin; (2) marginalization refers to the exclusion of both cultures; (3) separation or segregation refers to the retention of traits from the culture of origin without integrating into the newer culture; and (4) integration or biculturalism refers to the acceptance of both cultures (Fitzgerald, 2010).

Time spent in the United States, viewed as a proxy measure for acculturation, is another contributing factor to health behaviors (Akresh, 2007). Though the literature has advanced our understanding of acculturation and its impact on Latinos, there is limited

knowledge about how acculturation is related to length of time spent in the United States. In general, acculturation continues to be an area that requires further exploration. Conversely, Palreddy et al. (2010) have argued that the number of years of residence in the United States is not predictive of acculturation. They performed an analysis using the Short Acculturation Scale for Hispanics and three subscales (Language, Media, and Ethnic Social Relations). They found that the number of years spent in the United States predicted "Language Use" and "Ethnic Loyalty" (Palreddy et al., 2010), suggesting that a longer period spent in the United States predicts higher acculturation in terms of language (i.e., a greater likelihood of speaking English rather than Spanish at home). Additionally, Palreddy et al. (2010) found that the number of years spent in the United States also predicted the "Media" subscale. This suggests that the greater the duration of time spent in the United States, the higher the level of acculturation demonstrated in media usage, that is, likelihood of watching movies and television in English rather than Spanish (Palreddy et al., 2010). However, the number of years spent in the United States was not found to be predictive of the "Ethnic Social Relations" subscale, indicating that the number of years spent in the United States does not predict social relationships (Palreddy et al., 2010).

There is evidence that with increasing years of residence in the United States there are negative effects on health behaviors such as, diet, birth outcomes (low birthweight and prematurity) and substance abuse among Latinos (Bolstad & Bungum, 2013; Fitzgerald, 2010; Lara et al., 2005). Among the Latino immigrant population, acculturation is a strong indicator of dietary change (Akresh, 2007; Bolstad & Bungum, 2013). Contributing factors to dietary changes are food availability and the introduction

to different foods and ways of preparing food (Bolstad & Bungum, 2013; Fuentes-Afflick & Hesson, 2008a). Studies have shown that after Latino immigrants settle in the United States, they experience changes in tastes, food preferences, and health-related behaviors that have deleterious effects on their health (Akresh, 2007; Ceballo & Palloni, 2010; Fuentes-Afflick & Hessol, 2008b). This is referred to as the 'acculturation paradox' (Ceballos & Palloni, 2010). For this reason, health behaviors and risk factors become more unfavorable with greater acculturation. Diets generally tend to be more nutritious among less acculturated immigrants (Bolstad & Bungum, 2013; Callister & Birkhead, 2002; Lara et al., 2005). Less acculturated Mexican women tend to have better nutrition because of their traditional dietary practices that result in higher intakes of protein, vitamins A, C, E, and B6, folate, calcium, iron, potassium, and magnesium (Callister & Birkhead, 2002; Lara et al., 2005). Eating fruits and vegetables is a protective factor for maintaining a healthier body weight and reducing poor health outcomes (Bolstad & Bungum, 2013; CDPH, NEOP, 2014). In a recent study involving logistic regression, Bolstad and Bungum (2013) found that Latino immigrants who had been in the United States for a longer period of time tended to have a lower consumption of fruits and vegetables compared with those who had been there for less time.

Acculturation has also been associated with negative outcomes resulting in a higher BMI, overweight, and obesity. This ultimately has a negative effect on maternal and infant health outcomes (Bolstad & Bungum, 2013; Ceballos & Palloni, 2010; Fuentes-Afflick & Hessol, 2008b; Petti & Cowell, 2009). Recently studies have linked acculturation with obesity among Latinos (Fuentes-Afflick & Hessol, 2008b; Wolin et al., 2009). In a multivariable analysis study, obesity among women who had lived in the

United States for at least 20 years was found to be two times greater than for women who had lived in the United States for 10 years or less (Wolin et al., 2009). This may suggest that the relationship between time in the United States and body weight increases over time. Overall, acculturation has been associated with overweight and obesity among Latinos as a result of migration (i.e., changes in diet, exercise, stress, and cultural norms), affecting body composition (Fuentes-Afflick & Hessol, 2008b; Wolin et. al., 2009).

Numerous studies have demonstrated a clear relationship between greater acculturation and negative birth outcomes (Bolstad & Bungum, 2013; Ceballos & Palloni, 2010; D'Anna et al., 2012; Lara et al., 2005). Higher acculturation is associated with worse birth and perinatal outcomes (e.g., prematurity, low birth weight, teen pregnancy, and neonatal mortality), as well as with undesirable prenatal and postnatal behaviors (e.g., substance abuse, diet, and decreased number of breastfeeding mothers). For example, breastfeeding has been linked to a reduction in the risk of type 1 diabetes and obesity among mothers and babies (Lund-Blix, Stene, Rasmussen, Torjesen, Andersen, Rønningen, 2015; Aguilar Cordero et al., 2015). Lower acculturation is associated with a greater likelihood of breastfeeding (Lara et al., 2005). Acculturation has also been linked with lower birth weight as an indirect result of smoking, substance abuse, and dietary intake (Lara et al., 2005).

Page (2004) reported that Mexican immigrants who had lived in the United States for more than 5 years had higher parity, more pregnancy complications, and fewer planned pregnancies. Greater acculturation has also been associated with higher prenatal stress, which was linked with preterm delivery (Page, 2004). Higher stress is linked to substance abuse and low levels of social support, which can impact on both maternal and

fetal outcomes (Page, 2004). Acculturation status acts as a marker for certain beliefs, values, or lifestyles that protect mothers of Mexican descent from negative birth outcomes (Page, 2004). Less acculturated Latinas have demonstrated better perinatal outcomes because of the following behaviors:

> maintenance of their indigenous culture's dietary practices; promotion of a healthy lifestyle including low levels of substance use; caring and supportive family networks; positive attitudes toward and valuing of childbearing and childrearing; and value systems including a spiritual lifestyle and strong religious beliefs and practices. (Callister & Birkhead, 2002, p. 23)

This is also known as the "Latina paradox" and is particularly evident among Mexican-born women (McGlade, Saha, & Dahlstrom, 2004). The "Latina paradox" can refer to migratory selection processes, cultural protective factors, and social support that are maintained informally by family, friends, community members, and lay health workers (McGlade et al., 2004).

Adames et al. (2014), Edwards and Cardemil (2015), and Garza and Watts (2010) have identified *familismo*, *personalismo, respeto, simpatía,* and *confianza* as key elements that have the greatest potential to influence Latinos beyond simply preferred language, ethnic label, and even acculturation status. Each of these elements should be considered when reaching out to Latinos. *Familismo* (family) is the cultural value that focuses on the central role of the family and refers to strong feelings of attachment, commitment, loyalty, and obligation to family members (Edwards & Cardemil, 2015; Garza & Watts, 2010). *Respeto, personalismo* and *simpatía* are values that guide interpersonal interactions, both within the family and with individuals outside of the

family (Edwards & Cardemil, 2015). *Respeto* (respect) refers to an interactional style that is formal and generally serves as a guide for navigating hierarchical relationships, often within families (Edwards & Cardemil, 2015). *Personalismo* refers to an interpersonal interactional style that promotes personal connections and relationships, whereas *simpatía* refers to an individual's general and genuine likeability (Edwards & Cardemil, 2015). *Confianza* (trust) refers to the association of individuals who are invested in establishing relationships that are based on reciprocal trust (Adames et al., 2014; Garza & Watts, 2010). Moreover, *confianza* can be understood when someone expresses his or her deeper feelings only to an inner circle of familiar confidants (Adames et. al., 2014).

Highly acculturated Latinos are more likely to engage in substance abuse and undesirable dietary behaviors and to experience worse birth outcomes compared with less acculturated Latinos (Lara et al., 2005). Kasirye et al. (2005) have confirmed this in their study. Specifically, they found that acculturation was significantly associated with a lifetime of substance use, risky sexual behavior, low fruit consumption, and high fast-food meal consumption among pregnant Latinas in California. For this reason, it is believed that acculturation is a critical predictor of health-risking behavior among pregnant Latinas (Kasirye et. al., 2005). Conversely, there is some evidence indicating that the acculturation process has a positive effect on the use of health care facilities and on self-perceptions of health among Latinos (Lara et al., 2005). It is important to note that when reviewing the literature, hardly any of the studies on the effects of acculturation on Latinos in the United States have been done on individuals of Mexican descent (Lara et al., 2005).

Because acculturation does not have static boundaries, it is difficult to put into perspective. In fact, it is a complex phenomenon, because every individual and community experiences this phenomenon somewhat differently. The majority of published studies about acculturation have focused on the changes that individuals or immigrants go through while they become accustomed to the characteristics of a newer culture (Fitzgerald, Gabriel, & Himmelgreen, 2010). The present study examines acculturation based on time spent in the United States. Although acculturation is complex, it is clear that it has the ability to influence individuals and communities, particularly as it relates to maternal and infant health. It is understood that acculturation is a process and that the cultural changes that individuals undergo can have many facets because of the countless combinations of traits that people can retain or adopt from the original and new cultures.

Summary and Transition

The EMT allows for an examination of the way in which bidirectional influences can impact on the individual and environment which influence human behavior from food consumption to daily exercises. The EMT also takes into consideration those conditions or events occurring in the life of the developing person that will influence human behaviors (Bronfenbrenner, 1985). In addition, it recognizes that the elements in the environment that have the greatest meaning for an individual will have the greatest impact on human behavior (Bronfenbrenner, 1979). For this reason, it is critical to understand how the environment (including culture) is perceived rather that how it is in reality (Bronfenbrenner, 1979).

Pregnancy is considered to be a strong risk factor for new or persistent obesity. Consequently, maternal obesity is associated with an increased risk for congenital heart defects, the most common type of birth defects (Association of State Public Health Nutritionists, 2013). In recent years, Latinas in California have evidenced high rates of overweight and obesity before pregnancy and excessive weight gain during pregnancy (CDPH, 2012). The patterns of being overweight and obese and experiencing excessive weight gain before and during pregnancy can potentially put the mother and infant at risk of health complications.

The growing prevalence of GDM among Latinas across the nation and in California has been growing in recent years (CDPH, 2012). Diet, nutrition, and physical activity are critical factors for preventing and controlling GDM and ultimately reducing pregnancy complications. Maternal diabetes can cause fetal death and congenital anomalies, especially when it is not treated or controlled. A significant body of research on the health of minority groups has shown that although immigrant Latinas experience unexpectedly favorable outcomes in maternal and infant health, this advantage deteriorates with increased time of residence in the United States. Obesity, gestational weight gain, and GDM impact Latinas in California before, during, and after pregnancy. Acculturation is an influential factor in health-related behaviors for Latinas, in particular, as they adjust to a new environment and culture. Further examination is required to learn how culture influences gestational weight gain and maternal and infant health outcomes.

The study questions, design, sample, instrumentation, materials, data collection, and analysis are discussed in detail in Chapter 3.

Chapter 3: Research Method

Introduction

In this chapter, I outline the research design, discusse my role as the researcher, the methodology, issues of trustworthiness, and ethical procedures. The purpose of this study was to examine the effects of culture and acculturation on diet, physical activity, and weight among pregnant immigrant Latinas of Mexican descent in Watsonville, California. I hypothesized that culture and acculturation influence the diet, physical activity, and weight of pregnant immigrant Latinas in a more negative than positive manner. Studies have indicated that pregnancy is a risk factor for new and persistent obesity (Herring, Rose, et al., 2012). Specifically in California, Latina women are more likely than White women to enter pregnancy overweight or obese, and are more likely to gain excessive weight during pregnancy (CDPH, 2012).

Research Design and Rationale

A descriptive qualitative phenomenology research design was used in this study. Phenomenology is based on an interest in understanding the meaning of lived experiences related to a specific phenomenon, with a specific focus on the subjective consciousness (Magnussen, Amundson, & Smith, 2008; Matua & Van Der Wal, 2015). A phenomenon is an event, an experience, or something that happens to someone (Moustakas, 1994). Phenomenology is considered a discipline that investigates people's experiences to reveal what lies hidden in them (Matua & Van Der Wal, 2015). The philosophy of the phenomenological approach centers on the detailed description of consciousness as experienced from the first-person viewpoint (Moustakas, 1994). Phenomenology originated as a philosophical movement founded by Edmund Husserl who developed it as

a rigorous science for studying the world (Matua & Van Der Wal, 2015). Husserl felt that the perception of the experience itself constituted the source of knowledge and that obtaining knowledge was a matter of getting inputs from people who had directly experienced a phenomenon (Sokolowski, 1999). Husserl posited that the essence of phenomenology begins with the concept of epoche or "bracketing" (Moustakas, 1994). Epoche and bracket refer to the "freedom from suppositions" that allows us to set aside prejudgments, biases, and preconceived ideas about the world in order to determine the true meanings of the "things themselves" (Moustakas, 1994, p. 1). The epoche centers on the notion that people cannot feel that they know things without reflecting on them and that meaning is only provided by people's thoughts about their experiences (Sokolowski, 1999). Bracketing is important for theoretical reasons. First, it allows an individual to detach from all forms of conventional opinion, including commonsense psychological and metaphysical theorizing regarding the nature of the intentional (Sokolowski, 1999). Second, it allows for central structures of subjectivity by putting aside psychological, cultural, religious, and scientific assumptions. By getting behind or to one side of the meaning of acts, new features of those acts come to the fore (Sokolowski, 1999). In this study, phenomenology was applied to gain insights on the human experience of how the phenomenon of culture and acculturation can influence human behavior during and possibly after pregnancy. More specifically, it was used to examine the "how" and "why" of the participants' lived experiences: how they understand the phenomenon and the meaning they give the phenomenon. The benefit of using the phenomenological approach is that it promotes understanding of human perceptions regarding specific experiences or

events (Sokolowski, 1999). Phenomenology, unlike other methods, focuses directly on individuals' experiences based on their own individual perceptions (Moustakas, 1994).

The phenomenological approach comprises two main approaches: interpretive (or hermeneutic) and descriptive (or transcendental; Creswell, 2007). Transcendental phenomenology focuses more on descriptions of the experience of participants and less on their interpretation (Creswell, 2007). The core of this approach is to explain the essences of human experiences from individuals' experiences (Moustakas, 1994). The use of hermeneutic phenomenology enables a focus on the interpretive process by seeking out psychological or sociological factors that have influenced the response (Moustakas, 1994). Both approaches, descriptive and interpretive, share the same philosophical underpinnings of humanism and constructivism (Moustakas, 1994).

The goal of applying descriptive phenomenology in this study was to obtain a description of the meaning of the experiences from the participants' perspectives. Transcendental phenomenology, according to Husserl, emphasizes subjectivity and discovery of the essences of experience and provides a systematic and disciplined methodology for deriving knowledge (Moustakas, 1994). Using the ecological model theory, I applied a transcendental phenomenological approach by conducting key informant interviews with pregnant immigrant Latinas to examine whether their health behaviors were influenced by culture and acculturation. To ensure the fidelity of phenomenological research, I focused on the descriptive aspect of the participants' experiences as they had experienced them, presenting their experiences from their points of view, setting aside my experiences (as much as possible), and examining a fresh perspective toward the phenomenon (Creswell, 2007).

The purpose of conducting key informant interviews was to understand "how" and "why" culture and acculturation may have influenced health behaviors among pregnant immigrant Latinas in California. This examination addressed the following research question: What are the effects of culture on diet, physical activity, and weight gain during pregnancy among Latinas who have immigrated in the last 5 years and who currently live in Watsonville, California? The intent behind this research question was to explore the complex set of factors surrounding the issue and to present the various perspectives or meanings held by the research participants (Creswell, 2009).

The main benefit of using the method of key informant interviews was that I was able to obtain direct information from individuals with the most knowledge about the issue. They consequently offered insights into the phenomenon (Creswell, 2009; Parsons, 2008). Interviews provide more detailed information than other data collection methods, such as surveys (Boyce & Neale, 2006; Parsons, 2008). They may also provide a more relaxed atmosphere, so that participants may feel more comfortable about sharing information. Key informative interviews are also considered a practical technique for collecting in-depth content (Parson, 2008). They enable the researcher to "capture the complexity of individuals' feelings, thoughts, and perceptions" through the language of the vital information source, in this case, pregnant immigrant Latina women (Boyce & Neale, 2006). Consequently, these women would be expected to reveal their mental worlds and the logic of their experiences, which would then allow the researcher to penetrate the words as personal symbols for the phenomenon (Boyce & Neale, 2006). The downside of key informant interviews is that they may provide indirect and filtered information, and not all of the participants may be able to articulate their experiences as

they actually occurred (Creswell, 2009). Moreover, the knowledge gained may not be generalizable to other groups or settings. In other words, the findings may only be unique to the studied group, and cannot be applied to other groups (Creswell, 2009; Parson, 2008). In addition, data analysis can be time consuming and the results can be easily influenced by the researcher's personal biases and characteristics (Creswell, 2007). There are some set-backs associated with the use of an interview format for this type of phenomenological research. A frequent criticism is that the research process is not random (Hycner, 1985). Phenomenological researchers are attempting to illuminate human phenomena and not to generalize the findings (Hycner, 1985). Therefore, "randomness, or participants unable to articulate the experience, might, in fact, keep the researcher from fully investigating the phenomenon in the depthful manner necessary" (Hycner, 1985, p. 294). The limited number of participants can be seen as an issue, but the in-depth nature of data received from the interviews ensures quality. Another criticism is that because of the limited number and nonrandomized selection of participants, the results cannot be generalized and can, therefore, be considered useless. The process of learning about the experiences of even just one unique individual is what makes phenomenology unique, as it provides a lens into human beings in general. The accuracy of descriptions provided by the participant can potentially pose a threat, as participants may have difficulty applying a "retrospective viewpoint" and verbalizing nonverbal experiences. One could argue that any description of an experience is already different from the experience itself. However, for research purposes, verbal descriptions of experiences are required. Therefore, the experiences will rely on a retrospective viewpoint (Hycner, 1985).

Role of the Researcher

My role as a researcher in this study was to gather, organize, and analyze the perceptions of individuals who had experienced the phenomenon under investigation without bias. As a researcher, my role was that of an active participant as I developed the key instrument and collected data. I conducted interviews with immigrant pregnant Latinas who had been living in the United States for the last 5 years and met the inclusion criteria. As a researcher, I was aware that face-to-face interviews are intensive and time consuming because of scheduling and logistical planning. However, it was critical to study this cultural group by conducting interviews. The use of interviews provided an opportunity for the free exchange of ideas, open-ended questions to capture culture-sharing in detail, use of the participants' native language, and the establishment of trust between me, as the researcher, and the participants so as to capture their lived experiences (Creswell, 2009).

During the interviews, I remained neutral and I maintained nonjudgmental views when collecting data. I did not lead participants or influence their perspectives on how to answer the interview questions. I did not exert pressure on participants to answer any questions that they do not want to answer; nor did I share my own stories that may have influenced their responses.

Because qualitative research depends on personal interactions for data collection, I established trust and rapport with each participant. This was critical and important for this study, because the topic was sensitive and personal. To establish trust and rapport, I applied Latino cultural values (see the section on "Definition of Terms" in Chapter 1) and norms as part of the methodology at the beginning of each interview. This included

respectful small talk in Spanish during the first couple of minutes of each interview, using the formal "usted" form in speech, and behaving in a deferential manner with the participants.

As a researcher, I remained neutral and adopted an empathic and nonjudgmental view when collecting data, demonstrating sensitivity, respect, and awareness (Creswell, 2009; Patton, 2002). To avoid researcher bias, I did not lead participants, or imply how I may have wanted them to answer the interview questions through facial expressions or gestures that may have influenced their perspectives (Walden University, 2014). In addition, I did not push participants to continue answering questions that they did not want to answer. I also refrained from sharing my own stories with participants, or sharing participants' stories with other participants (Walden University, 2014). On the contrary, I audio recorded the interviews and used a researcher's journal to record my reflections, ideas, and thoughts about possible connections among the data and the participants (Walden University, 2014). In addition, I applied a bracketing approach throughout the project to prevent any misconceptions or stereotypes from arising during my research study, to ensure that participants' perceptions of the phenomenon remained intact, and to ensure that mismanagement of the Latino community's trust did not occur during and after my research.

My goal for this study was to ensure the presentation of a holistic assessment by developing a picture of the issue and identifying various factors related to the research problem (Creswell, 2009; Patton, 2002). I analyzed the data that emerged as the study participants saw, heard, and understood the research problem and responded to the interview questions.

I was already familiar with the research site (Watsonville, California) as I was born and raised there. Although I moved away after 17 years to pursue higher education, I have retained community connections based on my personal network (i.e., my family still resides in Watsonville) and public health profession. For the last 15 years, I have worked with various communities of color, in particular Latinos, on various social and health topics. To engage in and learn about their social and health needs, I have previously facilitated and conducted interviews and focus groups on sensitive and challenging topics. Over the years, I have improved and mastered my skills on engaging and communicating with Latinos to better understand their needs. Therefore, I felt comfortable engaging and communicating with the participants in this project. For the recruitment process, I explored my community connections and relationships to identify potential study participants. To protect the rights of human subjects during and after the data collection process, I obtained Institutional Review Board (IRB) approval from Walden University prior to the collection of data. The approval number obtained from Walden University is 03-05-15-0158050.

Methodology

As of 2012, there were 11.9 million foreign-born Mexicans living in the United States. This figure accounts for about 4% of the country's total population and 28% of the immigrant population (Ramírez García et al., 2013). Mexico is the largest source of immigrants to the United States (Ramírez García et al., 2013). In 2012, 38.2% of the total population in California comprised Latinos (United States Census Bureau, 2014a). In Watsonville, California (my research site), 81.4% of the total population were Latinos (United States Census Bureau, 2014b). There has been sustained entry of foreign-born

individuals into Watsonville, California. For example, since 2000 4,420 Mexico-born individuals immigrated to Watsonville, California for a variety of reasons such as the desire for economic improvement and better lifestyles (City-Data.com, 2014). Of these individuals, 2,148 were women (City-Data.com, 2014).

In 2012, there were 503,788 total live births in California. Of these births, 244,616 were to Latinas and 1,581 were to Latinas living in Watsonville, California (CDPH BR, 2012). The participants in this study were recruited from Watsonville, California. It is estimated that 41.3% of Latinos living in Watsonville were foreign-born (40.9% Latin America). This figure represents 27.1% of the population of California (City-Data.com, 2014; United States Census Bureau, 2014b). In Watsonville, California, Latinos comprise 77.8% of the population, and 89.4% of foreign-born residents speak Spanish at home (21% speak English very well and 79% speak English are less fluent) (City-Data.com, 2014).

Sampling Strategy

A purposeful sampling approach was used to recruit appropriate individuals in order to obtain insights on the research issue (Creswell, 2009; Patton, 2002). Therefore, research participants needed to meet the following study criteria: they were over 18 years old; had immigrated to the United States within the last 5 years; self-reported their ethnicity as Latina; were born in Mexico; were pregnant; had undergone a pregnancy in Mexico; planned to keep the baby after delivery; planned to remain in the Watsonville area during the study period; had no active history of substance use or psychiatric illness; had no restrictions in terms in diet/nutrition or exercise; and had no critical medical conditions. Research participants were pre-screened (see Appendix C) to ensure that they

met the eligibility criteria for the study. I did not discriminate between research participants based on their immigration status; nor did I ask for proof of their immigration status. I did not collect any immigration status information. I recruited and interviewed 10 immigrant pregnant Latinas (18 years or older) living in Watsonville, California, using a purposeful sample approach (Patton, 2002). Sample sizes in qualitative, phenomenological studies are generally much smaller than those used in quantitative studies (Creswell, 2007; Marshall, Cardon, Poddar, & Fontenot, 2013). While researchers who apply qualitative methodologies are unlikely to agree on the exact sample size needed for a qualitative study, they do agree that a number of factors can affect the sample size (Marshall, et al., 2013). Phenomenology is about the depth, and not the breadth of experiences and events (Patton, 2002; Walden University, 2014). The rationale associated with this school of thought is that more data does not necessarily mean more information, as just one occurrence or code of data is required for the analytical framework (Creswell, 2007; Patton 2002). The aim of qualitative research is to understand meaning as opposed to developing generalized hypotheses (Crouch & McKenzie, 2006). According to Creswell (2007) and Morse (1994), sample sizes ranging between 5 and 25 participants are considered appropriate for an in-depth phenomenological study. There are contributing factors that can influence a potential qualitative sample size such as the heterogeneity of the population, criterion-based sampling, multiple samples within one study, types of data collection methods used, the quality of interviews, the researcher's experience, and the budget and resources (Ritchie, Lewis, & Elam, 2003; Marshall et al., 2013). According to the phenomenology literature, qualitative studies can achieve saturation by faithfully following the principles of

qualitative research (Patton, 2002). A sample size of 10 is considered an adequate number for an in-depth phenomenological study, and the researcher can achieve saturation with 10 or less subjects (Patton, 2002).

Two types of recruitment efforts were applied for recruiting research participants: direct (also referred to as active) and indirect (also referred to as passive). Direct recruitment refers to recruitment efforts entailing direct contact with a potential participant (Gul & Ali, 2010). This can include anything from approaching a participant at a local event to handing flyers out to potential participants. Direct recruitment is one of the most effective recruitment strategies (El-Khorazaty et al., 2007; Gul & Ali, 2010). Indirect recruitment refers to indirect contact with potential participants (Gul & Ali, 2010). This can include leaving promotional materials at health clinics, stores, or churches. To directly recruit participants, I made promotional announcements at local churches as these are the most frequent gathering places for pregnant immigrant Latinas in Watsonville, California. Through promotional announcements (see Appendix D), I informed church attendees about the research study to encourage not only potential participants, but also to request them to encourage others, known to them, who met the criteria to also participate (snowball sampling). Making first (direct) contacts when recruiting potential participants is critical, because this provides an opportunity to inform a potential participant about the research study (Gul & Ali, 2010). The person who establishes the first contact with potential participants generally has the most influence in terms of getting those participants to enroll in the project (Gul & Ali, 2010). For this reason, it is suggested that the individual who makes the first contact with the participant should be very knowledgeable about the project and its rationale (Gul & Ali, 2010). For

example, that person should be able to answer any questions pertaining to the project. In addition, available evidence suggests that the person making the initial contact with potential participants should be of the same ethnicity to enhance recruitment efforts, especially among low-income minority women (El-Khorazaty et al., 2007; Gul & Ali, 2010). For these reasons, I made first contact with potential participants at church venues by giving them a flyer and informing them about the research study before, during, and after church services.

For my indirect recruitment efforts, I developed promotional materials (see Appendices E and F) to promote the study and recruit individuals. I approached local venues, ranging from local stores to churches (i.e., St. Patrick's Parish and Our Lady Help of Christians), and local Latino-owned businesses (i.e., Mi Pueblo Food Center and the D'la Colmena store) as these are the venues most frequented by the Latino community in Watsonville, California (see Appendices G and H). Agreements regarding the study were established with the recruitment sites before initiating efforts to recruit participants. The promotional materials (see Appendices E and F) contained the following information: the purpose of the study, who should participate, the incentive, the location of research study, the time commitment, a broad sense of the eligibility criteria, and relevant contact information. I established a unique local telephone number using Google Voice to be used for recruitment purposes and stayed in communication with research participants throughout the duration of the project. I developed a promotional flyer in both English and Spanish (see Appendices E and F). The promotional material was printed in color and distributed at the abovementioned recruitment sites to potential participants at the different churches to reinforce recruitment efforts.

Instrument

The purpose of the interview guide (see Appendices A and B) was to learn about the participants' dietary behavior and nutrition (the types and amounts of foods they consumed); the type and duration of physical activity; their weight history; and acculturation (the process of becoming incorporated into American culture in relation to their health behaviors). Using the interview guide, I specifically examined how culture and acculturation may have influenced diet/nutrition, physical activity and weight gain among the participants since their move from Mexico to the United States. During the interviews, I focused on how culture and acculturation may have influenced diet/nutrition, exercise and weight during the participants' pregnancies. My aim was to assess whether the process of becoming incorporated into American society has different health implications for immigrant Latina women during pregnancy.

Guided by the ecological model theory, the interview guide (see Appendices A and B) comprised an in-depth, semi-structured list of questions and topics that allowed me to examine how behaviors at both the individual and environmental levels are affected by, and affect, micro-, meso-, exo-, and macrosystem levels of influence. The ecological model theory posits that there is reciprocal causation between the individual and the environment. The interview guide included open-ended questions in order to avoid imposing existing constructs on the participants and biasing their responses. It consisted of a list of questions and topics (i.e., acculturation, nutrition, weight, and physical activity) that were covered during the interviews. My intention was to establish an informal and friendly atmosphere to converse naturally with the participants. I also acted as a moderator, guiding the respondents from one topic to another. My previous

experience in conducting key informant interviews with the Latino community and other ethnic groups was advantageous. The interview guide was reviewed and modified based on the suggestions of the three public health subject matter experts who reviewed the interview guide. The interview guide was pilot tested with two pregnant immigrant Latinas in Watsonville, California, to ensure that the tool was appropriate for the study. Pilot study participants received a $20 gift card to compensate for their time and feedback.

Interviews

The interviews were conducted in a professional and culturally congruent manner. Hence, I applied cultural values, knowledge, awareness, and acceptance of the immigrant Latino culture during the interview. I also adhered to the following communication guidelines recommended by Hardon, Hodgkin, and Fresle (2004) : (a) greet participants in a culturally appropriate way; (b) explain the purpose of the interview and obtain written consent; (c) requested permission to audio record the interview; (d) provide a comfortable setting to facilitate the interview at the local church facility; (e) I become an "active" listener; (f) behave in a culturally sensitive way; (g) utilize phrases that the participants use in the interview questions; (h) do not judge or give opinions about what the informant says, and treat her fairly and equally; (i) avoid asking leading questions; (k) follow the flow of the discussion, but make sure that all of the topics are covered; (l) ask 'probing' questions to clarify points or to encourage more explanation; and (m) respond to issues raised by the informants that are not on the interview guide, and probe on these as well.

Interviews were conducted in English or Spanish, depending on the participants' preferences. At the beginning of each interview, I provided participants with a general introduction and an overview of the confidential nature of the study. Participants' information was kept confidential. I estimated that each interview would be between 45 and 75 minutes long. Each participant was compensated with a $20 gift card for the time spent doing the interview. At the same time, I informed research participants that their participation in this study was voluntary and that they could refuse to participate in the study at any time. At the end of each interview, participants were given the opportunity to provide additional information that they may not have revealed during the interview.

Data Analysis Plan

Data analysis consisted of the following steps: reviewing the collected data; transcribing and reviewing audio recorded interviews; applying "bracketing;" identifying data relevant to the research question; identifying repeated patterns and ideas; organizing repeated patterns and ideas into coherent groups; organizing coherent groups into themes; conducting an evaluation; and reporting the findings.

My analysis of the interview data was guided by the data analysis model formulated by Miles and Huberman (1994) and by the coding procedure developed by Auerbach and Silverstein (2003). These two methods complemented each other, enabling the presentation of participants' experiences and perspectives on their real life situations as described during the interviews. The purpose of conducting a descriptive phenomenological study was to categorize participants' responses and develop patterns and themes (Moustakas, 1994). This aided explaining the perspectives, experiences, and

knowledge of immigrant Latina women experiences about being pregnant in Mexico and in the United States.

Before beginning the actual data analysis process, I consciously applied a bracketing approach entailing suspending any preconceptions I may have had about this topic in order to get to the true meaning of the participants' experiences. All information obtained through open-ended interview questions and dialogues was transcribed *verbatim* using the Transcribe*Me!* service provided by an independent external vendor specializing in developing high quality multi-speaker transcripts in both English and Spanish. Literal statements from each participant's interview were included in the reporting narrative. I reviewed and listened to each recorded interview from beginning to end several times and read the transcription a number of times to ensure accuracy and authenticity and gain a sense of the whole. At this time, I entered into the world of each participant with openness in order to understand her experiences from her perspective to understand what she said and set aside any interpretations and meanings.

The three phases of the Miles and Huberman (1994) model of data analysis are: (a) data reduction; (b) data display; and (c) conclusion drawing and verification. Data reduction refers "to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes or transcriptions" (Miles & Huberman, 1994, p. 11). For the actual coding procedure, I adopted the process formulated by Auerbach and Silverstein (2003) in order to organize all the collected data and make it manageable, ultimately discovering patterns, ideas, and themes. This coding process entailed six steps, with each step dealing with a different level of analysis.

Step one consisted of obtaining all of the raw data (i.e., the interview transcripts and my field notes). Step two consisted of identifying relevant data related to the main research question. During this step, the data was obtained by reading through all of the raw data and identifying data related to the research question. Step three consisted of finding repeating patterns and ideas. During this step, I relied not only on the literal content, but also on the number of times that an idea was mentioned and the context in which it was mentioned. Step four consisted of organizing the repetitive patterns and ideas into coherent groups. During this step, I examined the frequency of key phrases and ideas to find key patterns and ideas that could potentially provide the context for theme development. Step five consisted of organizing the coherent groups into themes. Step six consisted of creating a narrative based on the discovered themes. Although these steps are presented sequentially here, the coding process was not in fact a linear movement progressing from Step 1 to Step 6. As I coded, I went back and forth between steps. For example, as I became more familiar with the data, I realized that certain repeating patterns and ideas that were grouped under one theme made more sense when grouped under different themes. I continued doing this until I arrived at my selected themes.

Issues of Trustworthiness

In a phenomenological study, researchers aim for trustworthiness to ensure accuracy in reporting. Trustworthiness is a term widely used to evaluate qualitative research by considering the following criteria: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility (internal validity) refers to confidence in the "trustability" of the findings (Lincoln & Guba, 1985). The credibility in this study referred to the authentication and accuracy of the data obtained from the

participants. To ensure credibility, I obtained direct information from individuals who were impacted by the phenomenon in order to ensure a greater depth and understanding of the participants' subjective experiences. The data were audio recorded and transcribed *verbatim* which provided a tangible, direct, and credible data set. As a result, I was able to obtain detailed data providing insights into the research problem. In addition, the transcribed information was made available to participants, if they chose to review it and provide comments. Respondent validation "is systematically soliciting feedback about one's data and conclusions from the people you are studying" (Maxwell, 2009, p. 244). Respondent validation was valuable in ruling out any possible misinterpretations of the meanings of what participants said during the interviews, as well as the perspectives they had on the questions and topics discussed during the interview. However, this task was not required by the participants. At the same time, I recognized that research "participants' feedback is no more inherently valid than their interview response; both should be taken simply as *evidence* regarding the validity of your [researcher] account" (Maxwell, 2009, p. 244). Essentially, as a scholar practitioner, I remained objective and reported factual data "as is" to provide the study's evidence. I also maintained a research journal to capture the procedural process and field notes such as interview notes about nuances, verbal and nonverbal communication, interviews, and participants' contact information.

Transferability (external validity) means demonstrating that the findings are applicable in other contexts (Lincoln & Guba, 1985). Transferability is established by providing data about the content, data analysis, methods, and results in order to give the reader the opportunity to make a meaningful judgment about the work. The complete set

of interview transcripts was kept in a locked file. Dependability means demonstrating that the findings are consistent and could be repeated (Lincoln & Guba, 1985). In this study, I achieved dependability by ensuring accurate and authentic data collection and thorough data analysis and reporting of findings. Confirmability means demonstrating that the findings are directed by the participants and not by the researcher (Lincoln & Guba, 1985). An audit trail documenting the processes used and the data collected was established to provide dependability and confirmability.

Threats to trustworthiness include: offering too shallow a view of participants' experiences with the phenomenon; presenting bias in interpretation; leading participants' responses; not collecting enough data; reading into the data; and not letting the data speak for themselves (Moustakas, 1994; Sokolowski, 1999). To ensure the quality of this study, I audio recorded the interviews, transcribed them *verbatim*, and collected sufficient data to build up a complete picture of participants' perceptions of the phenomenon. I voluntarily provided a "validity checks" by making transcribed interview data available for review by participants, if they desired. Moreover, this re-confirmed whether what they said was what they wanted to say. This enabled me to obtain feedback from participants on the data collection to avoid over-generalizing, adding trustworthiness to my study.

Ethical Procedures

All participants needed to meet the inclusion criteria and sign the consent form before being interviewed. For this study, participants were expected to read, understand and sign the consent form prior to the study. The participants were not exposed to any substantial risks; nor were they asked to forfeit any personal rights. However, they were

aware of their rights prior to their participation. The informed consent form was reviewed and approved by the Walden University IRB for compliance with research and federal guidelines.

Once the potential participants had been identified, I set up interview dates, times, and locations. Participants were asked to sign the consent form at the beginning of the interview. I kept participants' personal and contact information confidential. This information was only used for the purpose of this study. I requested prior approval from the Walden University IRB. All data, transcripts, and analyses will be kept in a locked file box for at least 5 years after the conclusion of the study. After this time, the transcripts will be destroyed.

Summary

This chapter has focused on providing an understanding of a qualitative phenomenological research design and approach, along with a discussion of the role of the researcher, the selected methodology, issues of trustworthiness, and ethical procedures. A qualitative phenomenological approach was applied to explore whether culture influences health behaviors among pregnant immigrant Latinas living in Watsonville, California. Data collection occurred through open-ended key informant interviews. The interviews were transcribed *verbatim* by an independent external vendor, Transcribe*Me!* Services. The data analysis was guided by the data analysis model developed by Miles and Huberman (1994) and by the coding procedures formulated by the Auerbach and Silverstein (2003) in order to present participants' experiences and perspectives as described during the interview. Consequently, the codes and themes that emerged from the data analysis provided an understanding of participants' experiences.

Chapter 4: Results

Introduction

In this qualitative, phenomenological study, I investigated and examined factors that affect nutrition, physical activity, weight, and culturally-driven behaviors of pregnant immigrant Latinas living in Watsonville, California. In this chapter, data gathered from 12 women (two pilot interviews and 10 regular interviews) during face-to-face, semistructured interviews are presented. I transcribed the interviews with the assistance of the Transcribe *Me!* service. I reviewed the transcripts, immersing myself in the data to gain a sense of the whole, and coded all of the transcripts. I selected categories that were based on an iterative process of identifying, grouping, and regrouping. I collapsed and reshuffled themes until I was able to identify six major themes, each with several subthemes. I analyzed data according to the three major stages of qualitative data analysis described by Miles and Huberman (1994): data reduction, data display, and drawing and verifying conclusions. The results provide insights into the current status of pregnant immigrant Latinas in Watsonville, California, revealing how their natal culture contributed to different experiences during their pregnancies both in Mexico and the United States. I reviewed the transcripts with respect to my research question and in accordance with Miles and Huberman's (1994) qualitative content analysis framework.

In this chapter, I briefly discuss the pilot study. I then explore the participants' settings and their demographics. I outline the data collection process, describe the data analysis methods, and examine evidence of trustworthiness. I subsequently report the results of the study.

Research Question

The following research question was examined in the study:

RQ: What are the effects of culture on diet, physical activity, and weight gain during pregnancy among Latinas who have immigrated to the United States in the last five years and who currently live in Watsonville, California?

Purpose of the Study

The purpose of this qualitative phenomenological study was to explore the effects of culture and acculturation on the diet, physical activity, and weight of pregnant immigrant Latinas of Mexican descent in Watsonville, California.

Pilot Study (Participant Interviews)

The purpose of the pilot study (comprising two interviews) was to validate the utility of the survey interview guide. Conducting a pilot study helped to ensure that the interview guide used during the participant interviews was: (a) understood; (b) encouraged participants to share their cultural experiences on diet, physical activity, weight, and acculturation during the periods of their pregnancies; (c) was at an appropriate literacy level; (d) was culturally congruent; (e) elicited fluent responses in the participants' preferred language (English or Spanish); and (f) could be used to collect adequate information for data analysis. A brief description of the pilot study is below.

Two Watsonville, California research participants were interviewed for the pilot study that was conducted prior to interviewing the 10 study participants using the Qualitative Research Interview Guide (Appendices A [Spanish] and B [English]) designed for this study. These pilot study participants (A-1 and A-2) contacted me in response to local promotional efforts for the larger study. They met the eligibility criteria

for the study and wanted to be interviewed. Both participants were prescreened using the prescreen tool (Appendix C) before the scheduled interview. Participants A-1 and A-2 were interviewed separately in one of the classroom facilities of the Our Lady Assumption Catholic Church that was used for the study. The classroom provided a safe and private environment for the interviews.

Participants A-1 and A-2 did not have any problems understanding or responding to the questions in Spanish. Both provided sufficient information to conclude that the interview guide was effective and culturally congruent among the target study participants. Both A-1 and A-2 provided detailed information and personal experiences that endorsed the use of the interview guide. The interview guide allowed both pilot participants the opportunity to engage in a free exchange of experiences and ideas. Consequently, this provided the participants and me with an opportunity to establish trust and enabled me to capture their lived experiences and viewpoints (Creswell, 2009; Turner, 2010). The interview with A-1 was 16 minutes and 5 seconds long, and that with A-2 was 28 minutes and 49 seconds long. As a result of the two pilot study interviews, the interview guide (Appendices A and B) was deemed effective and reliable. The data from the pilot interviews were not used in the study analysis. The purpose of the pilot study was to ensure that the interview guide was culturally congruent and could be used to elicit appropriate and adequate information from the participants (Creswell, 2008; Hardon et al., 2004; Turner, 2010).

Setting

Watsonville, California is located on the central coast, 95 miles south of San Francisco at the southern end of Santa Cruz County. It extends over 6.78 square miles,

and has a population of 52,087 (City of Watsonville, 2015). Watsonville is a rich agricultural community known for its strawberries, raspberries, and apples, as well as lettuce, broccoli, and other vegetables. Watsonville's economic structure is based on agriculture and food processing (Watsonville Economic Development, 2015). As noted in Chapter 3, 41.3% of Latinos living in Watsonville are estimated to be foreign-born (40.9% were born in Latin America). This represents 27.1% of the population in California (City-Data.com, 2014; U.S. Census Bureau, 2014b). In Watsonville, California, 77.8% of the population is Latino, and 89.4% of foreign-born residents speak Spanish at home. Twenty-one percent speak English very well; 79% speak English less fluently (City-Data.com, 2014). Watsonville ranks 21st in terms of the size of its Hispanic market in the United States (Watsonville Economic Development, 2015).

In 2013, the estimated median household income in Watsonville was $45,172, the estimated per capita income was $15,873, and the median gross rent was $1,134 (City-Data.com, 2015). Women of reproductive age have access to health care services in Watsonville from providers such as *Salud Para La Gente* that offers services through Medi-Cal and a special program for pregnant women called Comprehensive Perinatal Services Program (CPSP; A. Silva, personal communication, October 5, 2015). CPSP provides a wide range of culturally competent services to Medi-Cal pregnant women, from conception through 60 days of postpartum care (CDPH, 2015; P. Curran, personal communication, October 7, 2015). In 2014, the CPSP program, through *Salud Para La Gente,* served approximately 510 pregnant women (A. Silva, personal communication, October 5, 2015).

All of the participants were interviewed in one of the classrooms at the Our Lady Assumption Catholic Church in Watsonville, California. The classroom provided a safe and private environment for each the interviews. The setting was familiar to all the participants as it has served as a safe haven for most of them, who have relied on various types of church services and resources. Therefore, the setting was appealing and acceptable to all as it provided a sense of trust. None of the participants seemed to be hurried or stressed in any way during the interviews. Two interviews were rescheduled from the original interview time due to lack of transportation, but they were completed at the rescheduled date and time without further issues. All of the interviews were conducive to thoughtful conversations and were conducted applying a lens of cultural competency in Watsonville. The staff at Our Lady Assumption Catholic Church work very closely with the Latino immigrant population, providing referrals to community resources and services. As one of the key community partners in this project, they referred and encouraged participants to participate in the study. However, this organization did not influence the study's participants during the interview process. Moreover, they did not have access to any of the data or information about the participants. In addition, the organization did not have any personal conditions to influence any of the participants' interview responses. The organization solely provided assistance relating to the research setting, outreach, and recruitment process.

Demographics

The 10 study participants were pregnant immigrant Latinas living in Watsonville. All of the participants self-reported as Latinas of Mexican origin, with an average mean age of 31 years. All 10 participants were born in Mexico: Baja California (n = 1),

Michoacán (n = 4), and Oaxaca (n = 5) and had lived in the United States/Watsonville area for an average of 5.1 years. The average length of pregnancy reported by the participants at the time of the interviews was seven months. The average school grade completed was the 5th grade for all participants, an exception being one participant who had a degree from a university in Mexico. All participants indicated that they planned to remain in the Watsonville area during the next 6–9 months.

The Participants

Table 1 presents participants' details on their birth place, preferred spoken language, preferred language for entertainment and information, time spent in the United States (Watsonville), and number of pregnancies in Mexico and in the United States. While saturation of the data occurred by the sixth interview, I chose to interview all participants.

Table 1

Descriptive Demographics for the Study Participants

Partici-pant code	Birth place	Preferred spoken language	Preferred language for entertainment & information	Language conducted the interview	Time in the United States	Number of pregnancies in Mexico	Number of pregnancies in United States
B-1	Oaxaca, Mexico	Mixteco	Spanish	Spanish	5 years	3	2
B-2	Michoacán, Mexico	Tarasco	Spanish	Spanish	5 years	2	2
B-3	Baja California, Mexico	Mixteco	Spanish	Spanish	5 years	4	2
B-4	Oaxaca, Mexico	Mixteco	Spanish	Spanish	5.5 years	3	3
B-5	Michoacán, Mexico	Spanish	Spanish	Spanish	5 years	2	3
B-6	Oaxaca, Mexico	Mixteco	Spanish	Spanish	5 years	3	2
B-7	Michoacán, Mexico	Spanish	Spanish	Spanish	5 years	1	1
B-8	Oaxaca, Mexico	Mixteco	Spanish	Spanish	5.5 years	2	3
B-9	Michoacán, Mexico	Spanish	Spanish	Spanish	5 years	2	3
B-10	Oaxaca, Mexico	Mixteco	Spanish	Spanish	5 years	4	3

Data Collection

I recruited participants through direct and indirect methods and outreach efforts. Direct recruitment and outreach included making a promotional announcement (see Appendix D) and distributing a promotional flyer (see Appendices E and F) at local churches: St. Patrick's Parish, Our Lady Help of Christians, and Our Lady Assumption Catholic Church. My Indirect recruitment and outreach efforts entailed posting the promotional flyer in community retail stores: D'La Colmena and Mi Pueblo Store. Consequently, I received 42 general inquiries about the study and the types of questions that would be asked. Of these 42 general inquiries, 25 potential participants contacted me through my unique locally established telephone number, Google Voice and/or through my Walden University electronic mail, expressing interest in the study. These 25 potential participants were pre-screened using the Pre-Screen Tool (see Appendix C), and the study criteria for determining inclusion or exclusion from participation in the study. The Pre-Screen Tool results and the individuals' fit with the criteria of the study were reviewed and assessed prior to formally inviting qualifying individuals to participate in the study and collecting any data. Of these 25 potential participants, only 12 individuals met the study's criteria and 13 individuals did not. Those 12 qualifying individuals were immediately invited to participate in the study. The first two participants were enrolled in the pilot study, while the remaining ten women were the main study participants.

The study eligibility criteria for research participants as described in Chapter 3, were as follows: over 18 years old; immigrated to the United States within the last 5 years; self-reported ethnicity as Latina; born in Mexico; pregnant; undergone a pregnancy in Mexico, plan to keep the baby after delivery; plan to remain in the Watsonville area

during the study period; no active history of substance use or psychiatric illness; no restrictions in terms of diet/nutrition or exercise; no critical medical conditions; and able to read, write, and speak Spanish or English. Participants who met the criteria were assigned a research code based on the order of qualifying participation in the study.

The 12 qualifying study participants were given the interview location, along with options regarding the date and time of the interview. Once the participant had identified the date and time, the interview was scheduled. Table 2 presents the following data: the dates of participants' responses to the study; the dates of participants' confirmations relating to study's criteria eligibility; the interview dates; and the interviews' audio length. At the beginning of the interviews, participants were given an overview of the study, the importance of the study, confidentiality, consent forms, and the topic areas of the interview questions. In addition, they were informed that the interview would be audio recorded. This information was also included in the consent form. A day before the scheduled interview, I called the participant to remind her about the interview appointment and to confirm her participation in the study. All participants signed the consent form prior to beginning the interview process. Interviews were audio recorded using the Transcribe*Me!* Service and a Sony IC Digital Flash Voice Recorder. Interviews were transcribed *verbatim*. I reviewed the transcripts several times for accuracy and authenticity. The transcripts were made available to all of the participants for voluntary review. However, there was no interest expressed in reviewing them. The participants indicated that they felt comfortable with the initial interview and that there was no need to review it.

Table 2

Interview Details

Participant	Date Responded	Date of Confirmation of Study Criteria Eligibility	Date Interviewed	Interview Audio Length (minutes: seconds)
B-1	April 13	April 13	April 16	20:15
B-2	April 13	April 13	April 16	24:53
B-3	April 15	April 15	April 17	22:35
B-4	April 15	April 15	April 17	10:29
B-5	April 13	April 13	April 18	20:55
B-6	April 5	April 5	April 18	10:57
B-7	April 18	April 18	April 19	21:43
B-8	April 23	April 23	April 25	11:51
B-9	April 23	April 23	April 26	22:55
B-10	April 23	April 23	April 26	20:05

Individual interviews began with introductions, an assurance of maintaining the confidentiality of all the information that was collected and recorded, validation that the participant was comfortable and able to participate in the interview, explanation of the participant consent form, and ensuring the availability of adequate time to conduct the complete interview. Participants were then asked to read and sign the consent form and were asked if they had any questions. All 12 participants read and signed the Spanish consent form without any hesitation. None had any trouble reading and understanding the consent form. Once the consent forms were signed, participants were given a copy to

keep and a "table copy" of the Interview Guide (Appendix A) to read during interview. The table copy of the interview guide was not given to any of the participants to take away with them. Before starting the interview, participants were informed that the recording was turned on, and all agreed to begin the interview without any hesitation. All participants were offered a $20 gift card for participating, along with a list of local community resources and services related to nutrition; physical activity, weight gain and pregnancy.

I collected data from each participant using the Spanish Interview Guide (Appendix A). The questions were asked in the same order, as in the guide, for each interviewee in a conversational style and probing questions were used to further explore and understand issues raised by participants. In addition, participants were asked to provide clarifications or were asked the question repeatedly if the answer appeared short or it did not appear that they had addressed the interview question. However, for the most part, participants did not have problems answering the questions and freely offered their opinions and ideas throughout the interviews. All participants conducted the complete interview and answered all of the questions contained in the guide (Appendices A and B). During the data collection process, I noted significant non-verbal communication reactions that were expressed by each participant during interviews in my research journal. This journal was used specifically for recording field notes for this study. The non-verbal communication was noted during the interview and was linked to the participants' code.

The process of data collection is just as important as the results and provides insight into the results. For this reason, an overview of the data collection process has

been described in this section, prior to presenting the results in the following section. The results should be read in light of the information presented in this section.

There were no variations from the data collection method outlined in Chapter 3. There were no unusual circumstances encountered during the data collection process.

Data Analysis

The Process

As described in Chapter 3, the analysis of the interview data was guided by the data analysis model developed by Miles and Huberman (1994) and by the coding procedure formulated by Auerbach and Silverstein (2003). These approaches complemented each other, enabling participants' experiences and perspectives of their real life situations to be presented, as described during the interviews. This aided the study, as I was able to explain the perspectives, experiences, and knowledge of the participants.

The data analysis was guided by the three phases of the analytical model described by Miles and Huberman (1994): (a) data reduction; (b) data display; and (c) conclusion drawing and verification. Data reduction refers "to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes or transcriptions" (p. 11). This allowed me to meaningfully condense the data into a more manageable form and to make intelligible transformations in terms of relating the content to the research questions (Miles & Huberman, 1994). Data display refers to an organized presentation that permits one to draw inferences from the information (Miles & Huberman, 1994). Conclusion drawing and verification is the process of clustering codes

and identifying themes to ensure that valid and reliable results were produced (Miles & Huberman, 1994).

The coding procedure formulated by Auerbach and Silverstein (2003) was used to organize the data (interview transcripts) in order to discover patterns, ideas, and themes. This coding process entailed six steps, as detailed in chapter 3. The initial step in this procedure was to transcribe, *verbatim*, all of the information collected from the interviews. Next, each transcript was reviewed for content, understanding, and accuracy, and then double-checked with the actual recorded audio. At this stage, I entered into the worlds of the participants with openness in order to understand their experiences from their perspectives, understand what they said, and set aside any interpretations and meanings. Each line of text was read for meaning. Then larger, meaningful phrases and paragraphs were read for the central ideas and meaning. With the research question in mind, word frequency and common phrases were identified and organized in a Microsoft Word 2010 master list. Key phrases, statements, and related passages that were directly associated with the phenomenon were identified (bracketed) and treated with equal weight (horizontalization) as a way of coding responses. During this step, the content from each interview transcript was separated into paragraphs with meaningful ideas. Then relevant paragraphs were sorted into categories. These categories were developed based on the representation of four or more similar ideas for a particular question. Consequently, central ideas evolved into meaningful and tangible codes. The codes represented the central ideas as they related to the research question. Next, the grouping of central ideas led to the identification of the themes. The judgment of relevance was subjective based on the following concerns: does it relate to the research concern? Does it

help me to understand the participant better? Does it provide clarity? Does it seem important, even if I can't say why? (Auerbach & Silverstein, 2003). For example, some participants mentioned that prenatal care in the United States was very different compared with prenatal care in Mexico and had a major impact on their daily nutrition, physical activity, and overall weight gain. This information was relevant to the importance of culture and acculturation on health behavior, particularly during pregnancy. Codes were then clustered by relatedness and validated across the ten participants to develop themes associated with the research question. The grouping of codes allowed for the construction of themes. The final part of this analysis involved constructing a written description or summary of the themes, as experienced by the research participants using their responses to the interview questions (Patton, 2002). The narrative provided the bridge between the research question and participants' subjective experiences (Auerbach & Silverstein, 2003).

A notable observation I made was noticing certain non-verbal expressions made by the participants during the face-to-face interview. Angrosino and de Perez (2000), have referred to this as a focused observation that emphasizes observation supported by interviews, in which the participants' insights guide the researcher's decisions about what to observe. I made the same observation among all of the participants when asking questions related to the economy and diet/nutrition. During this segment of the interview, I noticed that the participants had mixed emotional reactions that were completely different from their reactions during the rest of the interview. Participants' emotions were expressed in their voice delivery, gestures, facial expressions, and postures that revealed a combination of desolation and pleasure when they described their experiences. For

example, participant B-1 let out a long sigh of sadness as she described the hardship of having no money to buy food, then another deep sigh, but with a smile on her face as she described how life in the United States has provided easier access to food. I recorded the nonverbal expressions of each participant in my research journal with their respective participant study codes. I identified these non-verbal expressions during the data analysis procedure.

Another notable observation was that seven of the ten participants (B-1, B-2, B-3, B-4, B-6, B-8, and B-10) had undergone a tri-cultural experience due to their indigenous heritage and origin from Oaxaca, Baja California, and Michoacán; their experiences of living among Mexico's *mestizos* population; and their experiences in the United States. Historically, indigenous people in Mexico have been at a disadvantage due to discrimination by the Mexican government and some sections of Mexico's *mestizo* population, including the population of Mexican elites that they have endured from colonial times. Historically, a *mestizo* is a person with interracial descendants of Mexico's colonizers and indigenous communities. For example, an offspring of a European and an Indian would be considered a "mestizo." When indigenous people come to the United States, they are more susceptible to discrimination than Mexico's *mestizo* population (Mines, Nichols, & Runsten, 2010). In the United States, indigenous Mexicans are often forced to adopt the *mestizo* language, Spanish, as their dominant language because of the large *mestizo* population residing in the United States. The seven participants, noted above, used the Spanish language in the United States to seek services and resources as opposed to their indigenous language, Mixteco, or Tarasco. For these seven participants, Spanish was a second language and English would become their third

language. These seven participants indicated that they would want to learn English and were attempting to do so.

With this in mind, these seven participants have evidently immersed themselves within three cultures: indigenous, *mestizo*, and American. They indicated that they continued to speak their indigenous language at home and with their *paisanos*. For these participants, this was an important manifestation of acculturation where they are required to speak Spanish in the United States, regardless of what their first native language was. In this case, the participants assimilated according to the common expectations of other Mexicans/Latinos in the United States.

Overall, six themes were identified from all transcripts. These six themes were identified and selected from the initial 60 central ideas which were grouped into 27 codes that later became themes aligned with the study's theoretical framework and research question. Four separate passes or reviews through the central ideas and codes were needed to determine the overall six themes.

Incidences of the variety of central ideas were tracked throughout the process to identify the frequency of occurrence of each central idea. The frequency of each central idea provided an understanding of the value and importance it had among participants. Continual checking and referencing the transcripts for meaning and intent helped to keep the data fresh and reflective of the participants' experiences as they experienced them, present their experiences from their viewpoint, and examine a fresh perspective toward the phenomenon. All of the themes represented paradigms to which all of the participants had contributed. Key quotes, statements that illustrated issues of importance to the pregnant immigrant Latinas, were also identified.

A Tale of Two Cultures: Latinas in Mexico and the United States

Before describing the findings of this study, it is helpful to provide some cultural context of the women's lives. In this section, I describe the contexts of Latinas both in Mexico and the United States based on the interview data, observations, and anecdotal information obtained directly from Latinas. The following narrative, along with Figure 2, provides snapshots of how a typical day unfolds for Latinas living in these cultures.

Life in Mexico

The primary task for women centered on caring for their families. They would spend many hours of their day performing household tasks associated with caring for their immediate and extended families, such as cooking, cleaning, laundry, taking children to school, and shopping for food. As an extension of family care, women would often bring lunch to their spouses' job sites. Non-school-aged children accompanied their mothers in all their daily tasks. If needed, childcare would be shared among family members and *comadres*. Women constantly socialized before, during, and after these daily activities. While pregnant, women would seek maternal support from their immediate "triad" group which consists of their grandmothers, mother, and mother-in-law. They also sought support and assistance from their *comadres*, friends, and relatives relating to any household tasks ranging from cooking to chores, as well as receiving cultural and traditional home remedies such as teas, stews, or massages.

Doing laundry was seen as an opportunity to socialize with their family members, *comadres*, or friends, regardless of whether women lived in rural or urban areas. Those living in rural areas would walk to the nearby river to wash their families' clothes. For those living in urban areas, the local laundromat served as the location for laundering

clothes using washing machines. Laundry was viewed as an all-day event during which women could socialize with other women.

In the process of gathering and cooking food, women would have many critical responsibilities such as ensuring that their families had fresh cow and/or goat milk every day. Women would care for their domestic animals (i.e., cows, chickens, roosters, goats, and pigs) with the help of their husbands. They would also produce products for consumption such as fresh cheeses (*requesón* [cottage cheese], *jocoque* [sour cream], and queso *fresco* [fresh cheese]) and assisted with the slaughter. Milk and other edible goods (meat, cheese, or eggs) were traded by women or sold for money or exchanged for other household goods. Tortillas were a critical food item for every meal. The process of making tortillas was strenuous and quite intensive, beginning at the *milpas* (farm fields). Women would walk to the *milpas* to plant corn seeds every day until the planting process was complete. They subsequently walked every day to watch and care over their fields. Once fully mature, the corn would be harvested. The arduous process of cutting, gathering, carrying, and storing corn would be done manually, though animals were sometimes used to help transport the harvest. At home, the women would prepare the kernels by husking and soaking them in limewater (*cal*). This mixture, called *nixtamal*, would be cooked and left to soak overnight. After rinsing the soaked mixture the next day, the women would walk to the mill to grind the *nixtamal* into *masa* (tortilla dough). Depending on the size of the family, women could take about 1–3 liters of *nixtamal* to the mill everyday by foot. On their way to the mill, or at the mill, women would socialize with their *comadres*, family, and friends. Back at home, they would finally be ready to cook the *masa* and make tortillas for their families. This process of husking, soaking,

grinding and cooking *masa* constituted a daily task that easily spanned 3–4 hours. Together with cleaning and laundry, it meant that women would spend most of their day completing domestic chores. Women who were pregnant usually continue doing these domestic chores well into their third trimester.

Life in the United States

In contrast to the work they did in Mexico, migrant Latina women in the United States spend most of their time as day laborers, working in the agriculture fields picking strawberries for 8–12 hours every day. For this activity, they need to bend their lower backs in order to handle the strawberries. During work time, they have limited opportunities to socialize. The women in this study reported working until they were about 5-–6 months pregnant. After work, they pick up their children from daycare, work on their household chores (cleaning, laundry, and food shopping), and care for their families. Unlike in Mexico, they need to pay for daycare. Other than the time-consuming process of making tortillas, women are responsible for similar household work as described in the previous section.

Women rely on American supermarkets to get their food products and ingredients for cooking. Typically, supermarkets are not within walking distance, so women heavily rely on transportation to do their grocery shopping. For quick meals, they rely on semi-homemade products and prepared foods. For example, *tortillas* are either bought ready-made or they use processed flour, called *maseca,* to make tortillas. Because families do not have farm animals at home, eggs and meat have to be purchased at the store. Other items acquired at the supermarket include sugary drinks along with other sugary products such as cereals and breads.

Pregnant women rely heavily on transportation to go to work, attend prenatal appointments, visit stores, do laundry at the laundromat and visit their *paisanas, comadres,* or *compadres.* Pregnant women spend their spare time watching television and are confined to their home space.

This "Tale of Two Cultures" has described cultural differences and similarities in women's daily lives. In Mexico, the women had constant access to their social support group, particularly during pregnancy, were able to care for their families at all times, direct influenced the food gathering process, and were more mobile in carrying out their daily tasks. Conversely, in the United States, they have a set schedule working in the agriculture fields and picking strawberries. Their work schedule dictates how their daily tasks are executed, including dropping off and picking up the children from daycare to running households errands for their families (i.e., grocery shopping or doing laundry). In their contemporary lives in the United States, they rely heavily on transportation to do their errands. In both cultural contexts in Mexico and the United States, women's household and caregiving activities are conducted on a daily basis, regardless of other obligatory commitments or activities (e.g., occupations).

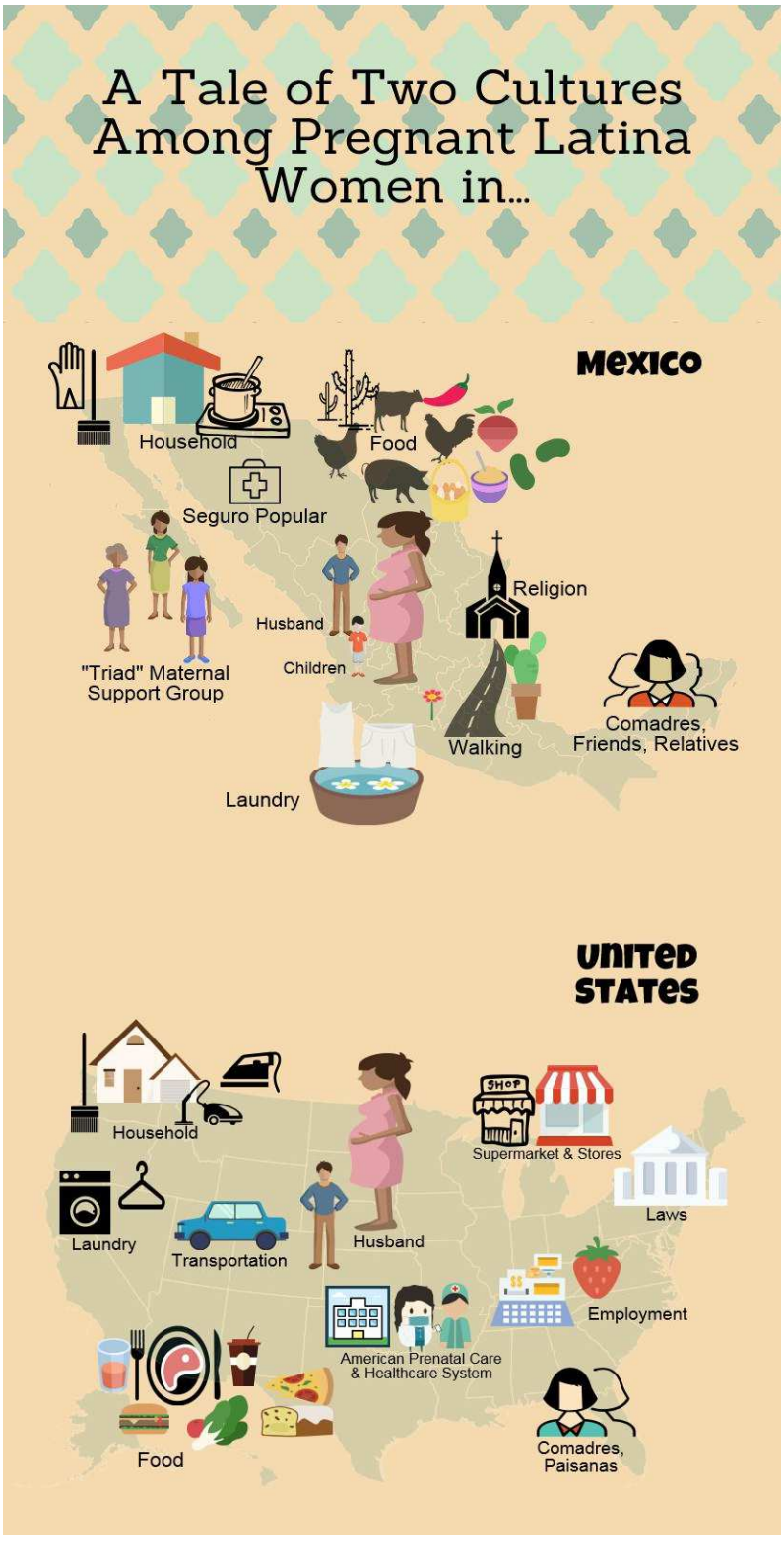

Figure 2. A tale of two cultures experienced by Latinas in Mexico and the United States.

Themes

Themes were developed by grouping codes into clusters of similar responses.

Table 3 illustrates the sequence of data analysis.

Table 3

Themes

Themes	Codes	Central Ideas
Theme 1: Bicultural Lifestyle Experience	1. Transportation 2. Housing/household 3. Employment 4. Economy 5. Civil conduct 6. Buying market 7. Cultural traditions	1. Unable to drive 2. Walking as transportation 3. Housing varies from garage setting to low-income housing 4. Stay home wife 5. Being confined at home because unaware of environment 6. Seasonal agriculture work 7. Money in USA has a high yield return 8. Purchase clothing, car seat, strollers as required standard in society and ensure civil conduct and state laws 9. Enduring cultural traditions and language
Theme 2: Personal Adjustment of Pregnancy & Prenatal Care	8. Healthcare in USA 9. Healthcare in Mexico 10. Cultural and traditional home remedies 11. Education and information about pregnancy 12. Health problem	10. Health coverage access 11. Comprehensive prenatal care 12. Timing of receiving prenatal care 13. Medical Procedures 14. Role of doctor 15. Role of sobadora & parteras 16. Home Births 17. Birth complications

(table continues)

Themes	Codes	Central Ideas
		18. Health education and information 19. Chronic diseases during pregnancy 20. Maternal care 21. Cultural home Remedies 22. Religion & faith 23. Emerging in dominant language
Theme 3: Social Support & Relationship	13. Family and friends 14. Community resources and services	24. Primary – family: husband, brothers and sisters- 25. Supporters as allies – friends (paisanos), mother-in-laws, grandmothers 26. Church support 27. Food bank 28. Employer 29. Tailored and culturally sensitive community services
Theme 4: Environmental Adjustment to Diet, Nutrition, Food Security and Access	15. Nutrition 16. Food availability and frequency 17. Food purchases & support 18. Food insecurity in Mexico	30. Meal schedule 31. Taking control of food family eats 32. Cooking traditional foods 33. Homemade food 34. Plant-based foods 35. Consumption of protein and grains 36. Sugar-intake 37. Local grown food 38. When have money, then buy prepared foods 39. Fast food is a treat 40. Having enough food to eat 41. Lack of time to prepare 42. Lack of variety of fruits and vegetables, natural foods 43. Community resources 44. Food purchasing power

(table continues)

Themes	Codes	Central Ideas
Theme 5: Context of Physical Activity	19. Type of Physical Activity 20. Perspective of physical activity	45. Walking preferred method 46. Domestic work 47. Hard physical farm labor 48. Sedentary 49. Gym 50. Physical activity is expensive 51. Investing in physical activity not a necessity
Theme 6: Weight Gain during Pregnancy	21. Levels of concern with weight 22. Difficulties associated with weigh gain during pregnancy 23. Non-verbal communication 24. Consumer market influence 25. Stress 26. Characteristics of Latinas 27. Participant incentive	52. Weight gain a concern 53. Weight not a concern 54. Gestational chronic diseases 55. Interview questions about food access and availability, economy, and overall pregnancy experiences triggered non-verbal response before verbal response. 56. Consumer market pressure 57. Deportation of husbands 58. Study incentive as a need 59. Characteristics of Latinas

Theme 1: Bicultural Lifestyle Experience

Many participants in the study reported that traditional familiar ways underwent adjustment upon immigrating to a new nation, particularly during pregnancy. Nevertheless, the participants indicated that their experiences of living in the United States and Mexico have provided them with both great opportunities and great hardships in their essential lifestyles and contexts. Participant B-1 shared, “Aquí no se manejar, estoy encerrada, tengo que esperar a mi esposo que llegue de trabajar para ir a la tienda o lavar” *(Here I don’t know how to drive, I'm cooped up, I have to wait for my husband to*

come from work to go to the store or do the laundry). The cultural change created a sense of impairment and social confinement, because what was familiar no longer existed and new ways had to be learned to meet their lifestyle essentials, ranging from purchasing food to attending prenatal appointments, and even to washing their clothes. In the United States, transportation is an element that is required and upon which individuals depend to execute their daily errands. In Mexico, they walked to the store on their own, without waiting for a ride. At the same time, the use of transportation also increases the probability of adopting a sedentary lifestyle. This is an example of acculturation "in action," revealing how individuals have adapted to the American way and became less engaged in physical activity.

Many of participants adapted into the new culture by incorporating some of their familiar lifestyle practices to meet their everyday needs. As participant B-10 shared, "porque tengo miedo de manejar. Caminamos para todos los mandados" *(Because I am afraid of driving, we walk for all our errands)*. Traditional and relaxed lifestyle rhythms, like being socially and physically active on a daily basis, have been interrupted in the new culture, as described by participant B-7:

> Realmente me quedo encerrada en mi casa, y en México era más activa, salía en las tardes, a caminar, a visitar a las vecinas; se da más eso de que le hablas al vecino o a la vecina, cosa que aquí no veo que se dé mucho, o sea cada quien como que se encierran en su mundo, trabaja, se regresa a su casa, y lo que quiere es descansar, no hay tanta convivencia como en mi país de origen *(Actually I stay cooped up in my house, and in Mexico I was more active, would go out in the afternoons, for walks, to visit the neighbors. It is more common that you talk to*

the neighbors [there], whom, here, I do not see much of. Or maybe everyone is locked in their own world, working and returning home, and all that is desired is to rest. There is not much socializing like in my home country).

The economy and employment situation in the United States has given the participants a sense of autonomy in their role as consumers, but with some drawbacks as described by participant B-5. At the same time, economical acculturation was also evident "in action", as revealed by participant B-5 when she described the ability to have autonomy as a consumer in the American market: "tenemos más que en México pero a veces es duro" (*We have more than we did in Mexico, but times are still hard*). Further, "el dinero aquí aunque rinde más, a veces no es suficiente." *(Although money here yields more, at times it's not enough)*. She explained: "en tiempo de trabajo, puedo comprar y gastar mi dinero porque me pagan cada semana. Pero en México, no podía gastar como aquí, todo es más limitado" *(During the work season, I can buy and spend my money because they pay me every week. But in Mexico, I couldn't spend like I do here, [because] everything was more limited)*; and "Sí, tengo poco aquí, pero más que en México porque aquí hay trabajo y allá no tienen mucho trabajo" (*Yes, I have a little here, but more than in Mexico, because here there is work and over there, there is not a lot of work*). Thus, the drawbacks were justified based on the knowledge that work in the new country gave the women money to live compared with when they lived in Mexico. As noted by participant B-6, "es mejor aquí, porque aquí uno trabaja y gana uno su dinero" *(It's better here, because here one works and earns one's own money)*.

Life in the United States has also resulted in the establishment of a new set of cultural expectations that were not enforced in Mexico, for example, the need to have a

car seat to take the baby home from the hospital and clothing for the baby to meet society's expectations. Participant B-8 observed:

> Cuando nace el bebé en México, nadie te dice nada. Ni como lo vistas ni piden las cosas que te piden aquí. Allá nomas con el rebozo lo puedes sacar a pasear sin que nadie te diga nada . . . ni que ropa trae puesta . . .aquí se necesita muchas cosas para el bebé, como el porta bebe para sacar el bebé del hospital *(When the baby is born in Mexico, nobody tells you anything. Not how you dress them nor do they ask for the things they ask you here. Over there just with a rebozo, you can take them out for a walk without anyone saying anything. . .not about the clothes they wear . . .here you need a lot of things for the baby, such as the baby's car seat to take the baby out of the hospital)*.

It was clear that the new country emphasized the importance and the lack of *familismo*. *Familismo* refers to the value and status of immediate and extended family relationships (Lugo Steidel & Contreras, 2003). The lack of *familismo* was powerfully observed and demonstrated through non-verbal expressions and a nostalgic tone adopted by all the participants. Participant B-2 observed:

> No tengo amigas, no tengo a nadie que me diga: "Estás trabajando, ya para de trabajar, tú puedes ir al disability. Vete al doctor. ¿Por qué sigues trabajando?" Yo necesito alguien que me diga de todas las ayudas que hay aquí, pero no sé nada" *(I don't have friends, don't have anyone who will tell me: "You are working, stop working, you can go on disability. Go to the doctor. Why are you still working?" I need someone who can tell me about the social assistance here, because I don't know anything)*.

Seven participants (B-1, B-2, B-3, B-4, B-6, B-8, and B-10) still had half their children residing in Mexico. Participant B-3 stated, "allá tengo a mis hijas. Son tres niñas que tengo allá" *(Over there, I have my daughters. There are three girls that I have over there)*. Not having family or friends nearby also created fear with the approaching the due date of the delivery, as indicated by participant B-8, "lo que pasa es ahorita como ya se está acercando el día y a veces tengo miedo de estar solita." *(What happens is that right now my due date is approaching and there are times when I am scared of being alone).*

Theme 2: Personal Adjustment of Pregnancy & Prenatal Care

Almost all of the participants reported that they had to make personal and cultural adjustments during their pregnancies in the United States. This personal adjustment demonstrates how acculturation begins to mold and modify an individual's choices regarding cultural traditions choices in relation to pregnancy and prenatal care. In this case, the participants adopted the American system of prenatal care as they perceived it as an asset for their pregnancy. Although learning about American prenatal care and the healthcare system was new for them, they saw a greater benefit in receiving timely prenatal care, gaining knowledge about their pregnancy, and receiving health information from their provider in their native language. Participant B-2 described how she had to adjust and modify herself within the new host culture to receive comprehensive prenatal care:

> Aquí es muy diferente y en México es muy diferente; aquí lo atienden a uno bien. Desde las primeras citas cuando vas a la clínica y recibes esa noticia, te mandan a lugares como al centro de nutriciones, a cómo vas a cuidar a tu bebé, a cómo se va desarrollando tu embarazo *(Here it is very different, and in Mexico it is very*

> *different; here they care for you well. From the first appointments when you go to the clinic and get that news, they send you to places like the nutrition center [to learn] how to care for your baby as your pregnancy develops)*.

She further stated,

> Yo no estaba acostumbrada a las atenciones que he tenido aquí, donde atienden muy bien a una mujer que está embarazada *(I was not used to these types of accommodations that I've had here where they are attentive to the wellbeing of a pregnant woman)*.

Because of the provision of prenatal care in the receiving culture, participants indicated that they had gained new and more comprehensive knowledge about their pregnancies. For example, participant B-9 stated:

> Aquí me dan citas más frecuentes, voy con el doctor me hacen exámenes y ultrasonidos para ver si el bebé está bien. Las citas son más regulares y organizadas *(Here they give me more frequent appointments, I go to the doctor to do tests and ultrasounds to see if the baby is fine. The appointments are more regular and organized)*.

> Estoy más informada aquí. Eso le ayuda bastante a uno porque hay mucha información que te dan y que le ayuda a uno *(I'm more informed here. That helps a lot because there's a lot of information that is given to you and that is helpful)*.

For this reason, the participants indicated that they attended all of their prenatal appointments, as indicated by the doctor. Thus, participant B-4 stated, "aquí voy con el doctor y a todas mis citas" (*Here I go to the doctor and to all my appointments*). More importantly, the participants indicated that they were able to adjust to the system of

prenatal care in California because it was provided in their native language (Spanish or Mixteco) which allowed them to build trust and develop relationships with the providers and medical staff.

Having access to health care coverage during pregnancy was different for most participants, as indicated by participant B-4:

> Es que en México no tenía como aquí. Aquí pude ir al doctor con seguro del Medical, y podía ir a todas las citas sin preocuparme. Voy a la clínica todo el tiempo. Pero en México, no era así *(In Mexico I didn't have* [healthcare coverage] *like I do here. Here I can go to the doctor with Medi-Cal insurance, and I can go to all appointments without being worried. I go to the clinic all the time. But in Mexico, it was not like that)*.

Participants indicated that prenatal care services in Mexico posed a greater financial burden because payment had to be made upfront to be seen and to receive routine check-ups as indicated by participant B-7:

> En México iba de vez en cuando nada más, porque allá no le alcanza el dinero a la gente para que lo estén chequeando a uno (*In Mexico I would go occasionally only, because there was not enough money to get checked [prenatal care]*).

Further:

> Y respecto a lo de México, es más difícil porque allá tiene que pagar uno las consultas. Y allá pues si lleva uno dinero lo atienden y si no, tiene que ir a los seguros. A veces es bien difícil porque los Seguros [Social] casi no le ayudan a uno. Es mejor tener dinero para poder atenderse [a través del cuidado privado]. Yo pienso que es mejor sistema aquí. *(Regarding Mexico, it is more difficult*

> *because we have to pay for the consultations. And over there, well, if you have money you get seen, and if not, you have to go to [Seguro Social] the national healthcare system. At times it is very difficult because the [free clinic of] the Seguro Social doesn't really help. It is better to have money to be seen [by a private practice]. I think the system is better here).*

In Mexico, for some participants, seeking prenatal care was a major task as described here by participant B-10:

> En México, en mi pueblo también iba a la clínica, pero tienes que agarrar un número y esperar para que el doctor te llame. Entonces tenía que llegar bien temprano para hacer línea como a las 4am o 5am para hacer línea, tarda mucho. Pero la clínica abría a las 8am. Allá, tienes que esperar más tiempo, hacer línea por mucho rato. *(In Mexico, in my town, I would also go to the clinic, but you have to grab a number and wait for the doctor to call you. So, you have to get there very early to get in line like at 4 am or 5 am, and it takes a long time. But the clinic opened at 8 am. Over there, you have to wait longer, get in line for a long time).*

Learning to trust the doctor's recommendations and medical advice in the United States was something that was learned and not easily understood by some of the women as stated by participant B-1:

> Aquí yo tengo miedo a los doctores. . . .Aquí en los Estados Unidos los doctores me están diciendo como va nacer mi bebe y que tengo que tener una cesaria. Como me dicen que voy a tener cesaria, pero yo no quiero tener, quiero tener mi bebe natural. Nunca he tenido una operación ni cesaría. Y les tengo miedo a los

> doctores" *(Here I'm scared of the doctors. . . . Here in the United States, the doctors are telling me how my baby will be born and that I need to have a C-section. How are they going to tell me that I will have a C-section, but I don't want to, I want to have my baby naturally. I've never had an operation or a C-section. And I am afraid of doctors)*.

For others, trusting the doctor was not a problem, particularly if they knew about prior pregnancy challenges as indicated by B-7: "hay muchos que pasan peligro, con la partera--que hay mujeres, se mueren cuando ellas se alivian" *(there are many who go through dangers, with the midwife. there are women who die when they deliver)*.

In Mexico, eight out of ten participants (B-1, B-2, B-3, B-4, B-6, B-7, B-9, and B-10) relied on "sobadoras" (folk healers) and "parteras" (midwives) for their prenatal care and home births. Most of the time, the "sobadora" or "partera" was their mother or grandmother as indicated by participant B-4: "En México sobando nomás. Tenía una sobadora que me sobaba mi panza" *(In Mexico only massage. I had a folk healer who massaged my tummy).* Participant B-6 noted, "mi mamá me alivió con todos mis otros hijos; y también mi suegra estaba allí. Mi mama cortó el cordón umbilical" *(My mother delivered all my other children; and my mother-in-law was also there. My mom cut the umbilical cord)*. Previous birth experiences shaped participants' perspectives on less traditional actions as described by a participant B-3, "del primero fue una partera, y como me puse muy mala ya me fui del segundo al hospital porque ocupó a que me provocaran los dolores, no me podía aliviar" *(with the first one, it was a midwife, and since I got really sick, for the second one I went to the hospital because I needed to be induced since I wouldn't go into labor).*

All of the participants indicated that they continued to follow their traditional cultural home remedies during pregnancy to promote their health and wellbeing. These included actions such as, cooking stews, *caldos* or *caldos de pollo* and making teas or warm drinks like cinnamon with lemon as described here by B-5: A veces no le quieren

> dar a uno medicinas cuando uno está embarazada, hay veces se le pega a uno la gripa, la tos; te haces jarabes o remedios de canela caliente, con limón. Cosas que no le hagan a uno daño. Que las mamás le dicen a uno: 'Hazte este remedio, hija, y échale miel de abeja y viera que bueno,' sí, también le ayudan a uno *(Sometimes medication is not given to us during pregnancy, sometimes you come down with the flu or cough; you make syrups or home remedies like hot cinnamon with lemon. Things that are not harmful. Things that our mothers would say: 'make this remedy, daughter, and add honey and see how good it is.' Those also help us)*.

The majority of participants indicated that seeking medical treatment was not seen as a necessary reason to visit the doctor, as indicated by participant B-8:

> Si me da una gripa o algo así no corro al doctor si no que mi miel con limón, por ejemplo, ¿no? Entonces eso me tomo. . .o sea, sí sigo cosas que antes hacía en mi país, que antes de acudir al médico aquí, prefiero yo primero agotar las instancias *(If I get a cold or something, I don't run to the doctor. Instead I have my honey with lemon, for example, right? So that's what I take…that is, I do follow the things I would do back in my home country, before going to the doctor here, I prefer to first exhaust my own resources)*.

Theme 3: Social Support and Family Relationships

Participants emphasized a lack of tangible social support during their pregnancies in California, besides the support provided by their husbands, highlighting this as a highly valued cultural necessity during pregnancy. Social support and family relationships are valued and necessary to have positive social interactions and warm interpersonal relations in the new culture, particularly during pregnancy. Participants indicated the lack of tangible and concrete social support and family relationships in the United States, which made them feel lonely as described by participant B-3:

> En México, tenía toda mi familia, mamá, mi suegra, toda mi familia está allá. Ahorita me siento sola, solo con mis niños. No platico con nadie sobre las cosas adultas. La Madre Sandra me está ayudando mucho ahorita. Pero estoy sola *(In Mexico, I had all my family, my mom, my mother-in-law, my whole family was there. Right now I feel alone, alone with my children. I don't talk to anyone about adult things. Sister Sandra is helping me a lot right now. But I am alone)*.

Certain family relationships like that of the maternal role are sought during pregnancy as described by participant B-8:

> En México, tenía todo el apoyo de mi mamá, para todo estaba mi mamá. Sí, es grande la diferencia porque para todo, un consejo o algo era con mi mamá y aquí no tengo la confianza de nadie" *(In Mexico, I had all the support of my mom. For everything my mom was available. Yes, it's a big difference because for everything, for advice or a tip it was with my mom; and here I'm not close to anyone)*.

An observation I made during the interviews was that many of the participants were very passionate and articulate when they described the type of social support they received from their mothers during their pregnancies in Mexico and how much they missed that type of social support in the United States as their mothers were back in Mexico. Another aspect of social support that was apparent and sought after was the community support that was more readily available in Mexico as described by participant B-7:

> El apoyo de la comunidad, por ejemplo, bueno, amistad y como que hay más valores de unión, de "OK, te acompaño, vamos." Como que eso se da más en México que aquí *(The community support, for example, well, friendship and like there's a sisterhood solidarity among pregnant women, of "OK, I will come with you, let's go." That occurs more in Mexico than over here)*.

Theme 4: Environmental Adjustment to Diet, Nutrition, Food Security and Access

All of the participants indicated that their core diet was altered as a result of their new location (United States), food access and purchasing power compared to when they lived in Mexico. At the same time, most participants indicated that they continued to consume their same traditional diet (e.g., tortillas, beans, eggs, salsas, and rice) as they did back home. However, the ingredients were not the same due to the environment in the United States. In Mexico, participants were able to rear their own chickens and process their own *maza* to make tortillas. In the United States, they are not able to rear chickens because of their housing situation. In addition, participants reported that they noticed increased access and consumption of processed ingredients and foods in the United States compared with consumption of these foods in Mexico. For example, tortillas were made from scratch with corn that they harvested themselves in Mexico, but in the United

States, the tortillas were made from *Maseca*, a processed corn flour product that is easily available in the country. Another example is that of tortillas that can be purchased in a package and ready to eat. Thus, participants went from a native plant-based diet to a more processed type of diet in the United States, as described by participant B-3:

> Aquí en los Estados Unidos hay más cosas que comer, diferente comida. Aquí hay más productos como panes, jugos, soda. Cuando vamos al banco de comida, me dan diferentes comidas que en México no comía. A veces no sé cómo preparar pero nos comemos todo porque nos dan comida para comer *(Here in the United States there are more things to eat, different foods. Here there are more products like breads, juices, soda. When we go to the food bank, they give me different foods that I didn't eat in Mexico. Sometimes I do not know how to prepare it, but we eat it because they give us food to eat).*

Participant B-4 indicated that the food selection in the United States was large compared to Mexico and was more affordable:

> Pues, aquí, hay más cosas aquí que allá. Porque allá no hay dinero. No más una manzana cuesta diez pesos, una manzana chiquita. Diez pesos pues *(Well, here, there are more things than there, because there is no money over there. Just one apple costs ten pesos, a tiny apple. Ten pesos,*[1] *well)*.

Participants reported that there was less variety when it came to eating in Mexico. They ate what they had, as described by B-2:

> Comía lo que había. Cuando hay frijol comíamos frijol. Cuando había un poquito de carne, a veces poquito de carne con salsa. Caldos *(We ate what we had. When*

[1] On April 30, 2016, US$1 = 17.1764 Mexico pesos

there were beans, we ate beans. When there was a little bit of meat, sometimes it was meat with salsa. Stews).

In Mexico, participants indicated that their diet and nutrition was based on *salsas* (tomatoes or tomatillos with *chiles*), pinto beans, hand-made tortillas made from their harvested corn, eggs hatched by their hens, rice, lentils, lima beans and, occasionally, meat. In the United States, many participants became more familiar with different types of vegetables that were not produced in their native areas in Mexico. For example, cauliflower, broccoli, and various type of greens (e.g., iceberg lettuce, spinach, and kale) were new to them and were easily incorporated into their daily diets in the new culture as described here by participant B-1: "Algunas comidas son diferentes a las de México como el brócoli, espinaca o lechuga. Algunas cosas no sé cómo preparar pero me enseñan" *(Some foods are different from [those in] Mexico like broccoli, spinach, or lettuce. Some things I do not know how to prepare, but I am taught how to).*

In the United States, participants gained greater purchasing power compared to their purchasing power in their native country, especially with food. The power was primarily gained in conjunction with access to employment and community resources that provided food items at a low rate or at no cost. The participants indicated that they were the ones that decided what the family would eat on a daily basis. Participant B-2 described food access in the United States as follows: "Aquí hay más comida como diferentes verduras y frutas y carnes" *(Here there is more food like different vegetables and fruits and meats)*. In Mexico, many of the participants reported that the types of foods they could consume were limited due to their financial constraints, as indicated by participant B-5, "En México, mi dieta era limitada porque no teníamos mucho dinero" *(In*

Mexico, my diet was limited because we didn't have much money). In Mexico, being on a diet, referred to having little or limited food as described here by B-3: "en México no tenía comida hacia dieta" *(In Mexico I didn't have food, I was on a diet).* Purchasing prepared foods or eating out were new concepts for many of the participants as this was not the custom in Mexico. In fact, buying prepared food and eating out were seen as luxuries too. When asked how often they purchased prepared foods, the majority of the participants indicated that they rarely did so. "Aquí comida rápida sí hay, pero casi yo no la he consumido. Sólo decir una, dos al mes, pero es rara vez realmente" *(Yes, there is fast food here, but I rarely consume it. Just like once, twice a month. But, it's very rare in reality)*. In comparison, when they lived in Mexico, they never bought processed food due to lack of funds: "No compraba porque no tenía para gastar" *(I didn't buy [processed food] because I didn't have [money] to spend)*.

Theme 5: Context of Physical Activity

Participants reported that walking was the preferred form of physical activity both in Mexico and the United States. However, most participants indicated that they walked less in the United due to the lack of sidewalks in their neighborhoods, their fear of being out in their communities, and their greater reliance on transportation to get around town. At the same time, they observed that their physical activity demands had changed as a result of the type of work and length of time spent working in the agriculture fields (all of participants indicated that they picked strawberries for 8–12 hours per day) in Watsonville. In Mexico, most participants had some type of farm work responsibility but did not have set farm work schedules as in the United States. Most women indicated that

they stopped working when they were 5–6 months into their pregnancies, as described by participant B-2:

> Aquí como es tiempo del trabajo, pues la rutina es trabajar, como en el campo de la fresa. Si es temporal, tratar de buscar otro trabajo en florerías, mercerías, que son de todo el año. . . pero ahorita es piscar fresa aun embarazada *(Here, during the work season, well the routine is working in the strawberry fields. If it is temporary, I try to get another job in the nursery, haberdashery, which are all year . . . but right now it's picking strawberries even while pregnant)*.

Participant B-4 said: "Piscado Fresa. Pero ya no estoy trabajando. Pare cuando llegue a los cinco meses yo descansé" *(Picking strawberries. But I'm no longer working. I stopped when I reached the fifth month; I rested)*.

Domestic work was seen as physical activity in both countries. Participants described domestic chores in their native country. Thus, (B-7) noted: "Allá era una rutina diaria de: lavar ropa a mano, barrer, lavar los trastes, hacer tortillas a mano; esa era la rutina de todos los días" *(There [Mexico] it was a daily routine of washing clothes by hand, sweeping, washing dishes, making tortillas by hand; that was the routine every day)*.

Participant B-10 noted: "Siempre hacia tortillas en el metate, entonces siempre hacia ejercicio con mis manos. Tambien cuando necesitaba leña, yo iba caminando. Siempre estoy caminando porque no hay caminos cerca. Siempre caminando" *(Always made tortillas on a ground stone tool, so I always did exercise with my hands. Also when I needed wood, I would go walking. I was always walking because there were no roads nearby. Always walking).*

In Mexico, walking was more accessible and easier for the particpants to do as they had plenty of space, including the walking distance between their family home, school, city plaza, stores, church, and the homes of numerous friends and relatives. In addition, daily walking was part of their daily work chores as many of the women participated in subsistence farming at home. This type of walking consisted of going to the *milpas* (farm fields) for planting, weeding, harvesting, keeping neighbors and wild animals at bay, preparing the soil for future plantings, and maintaining boundaries. This type of labor was continuous and required a lot of walking to and from the *milpa* to the participant's home in the village because *milpas* were not typically located within the town boundaries. In the United States, the space for the participants is more compact and restricted as there is a lack of physical space where they can walk freely without feeling restricted (i.e., by fences and property lines) compared with living in Mexico where they could walk practically anywhere without encountering many property lines (i.e., walk up the hills or country, streets). In addition, in the United States, the women do not find it as easy to get to community places (e.g., stores, the church, and parks) or to visit friends or relatives within walking distance. They also feel uneasy as a result of being unfamiliar with the environment. Participants described their experiences as follows:

> Pienso que allá en México camina uno más. Porque en cuestión de que allá hace uno más ejercicio porque para todo, hasta para salir afuera a lavar los trastes. Ya ve que allá son pilitas de agua y todo, y aquí [United States] tiene uno todo, casi como quien dice a la mano aquí adentro. Aquí en la casa adentro *(I think that in Mexico one walks more. Because . . . over there more exercise is done for everything, just to go outside to wash the dishes. You see over there, small*

troughs of water are used for everything, and here [the United States] we have everything, almost at our fingertips [inside the house]). (Participant B-5)

Pienso que hasta más a lo mejor porque allá [México] para todo caminaba uno y había más lugares donde caminar. Se iba uno al cerro o algo *(I think it's even more perhaps because over there [Mexico] you have to walk for everything and there were more places to walk. One would go up to the hill [area where they cultivated their milpa, a crop-growing field area where corn or other products are grown] or something).* (Participant B-9)

Aquí [in the United States] si quieres ir a una tienda tienes que subirte al carro, y allá [México] como que se prestaba más para mantenerte más activa *(Here [in the United States] if you want to go to the store, you have to get in the car, and over there [Mexico] it is more accessible to keep yourself more active).* (Particpant B-3)

Nomás caminábamos donde siembran las milpas. Empecemos a zacatearlo y ya cuando acabamos eso, y ya vamos a descansar otra vez, y ya está listo. Yo estaba caminando todo el tiempo *(We walked to a remote milpa for planting, weeding, harvesting, preparing the soil for future plantings, maintaining boundaries [*this is a constant labor and requires a lot of walking to and from the milpa to one's home in the village, because milpas are not located within the boundaries of the village or town*]. We would scatter the seeds into the field and when we finished, we would go rest again, and there it was done. I would be walking all the time).* (Participant B-10).

> Bueno, diferente en el sentido de que mis actividades en México eran diferentes a las de aquí. O sea, allá sí estaba más activa por cuestión de trabajo, y aquí [United States] estoy, se puede decir menos activa, porque soy ama de casa y no trabajo, estoy simplemente en mi casa, entonces estoy, estaba más activa en mi país de origen. . . Aquí no hay mucho adonde ir. Si voy tengo que esperar a mi esposo el día que descanse para hacerlo. Es lo que yo veo" *(Well, different in the sense that my activities in Mexico were different from those here. In other words, over there I was more active for work matters, and here [United States], you can say I'm less active, because I am a housewife and don't work. I'm just in my house, so I was more active in my home country . . . Here, there are not many places to go. If I go, I have to wait for my husband's day of rest to do it. This is what I see).* (Participant B-7)

Participants also indicated that in Watsonville, they felt that they spent more time sitting down due to having access to the television and being at home more compared to when they lived in Mexico. B-4 describes this as follows: "Estoy en casa más tiempo viendo televisión. En México, yo camina más para ir por la leña, tienda, para ir a la lavar, o para recoger los niños de la escuela" *(I'm home [spending] more time watching television. In Mexico, I would walk to get firewood,* [collecting firewood is a time-involving activity that is dangerous; often, women may walk 1–3 hours to get to locations with firewood, carrying it home on a tumpline, which is exhausting work] *store it, go wash clothes, or pick up the children from school).*

Most participants shared that their husbands encouraged them to walk during pregnancy and would join them: "vamos hacer ejercicio, vamos a caminar" *(Let's go*

exercise, let's go walk). Although most women indicated that being physically active was important during pregnancy, they did not feel the need to invest in physical activities such as gym memberships, exercise classes, exercise machinery, or both in Mexico and in the United States. In fact, this was seen as a huge investment and a luxury that was not within reach as described by the following participants:

> Nosotros caminamos, pero no gastar en ejerció *(We walk but don't spend on exercise)*. Me gustaría que pusieran un gimnasio. . . están bien caros, uno no alcanza a hacer ese pago. Que fuera para la mujer, tal vez por eso hay tanta mujer obesa (*I would like for them to install a gym . . . they are rather expensive, and one can't make that type of payment. It should be for women; maybe that's why there are so many obese women).* (Participant B-5)
>
> Es muy caro, pero me gustaría tomar clases de baile o ir al gimnasio (*It's very expensive, but I'd like to take dance classes or go to the gym).* "También allá [México], el dinero no nos alcanzaba para gastar en gimnasio o en ejercicio" *(Also over there [Mexico], there was not enough money to spend on gym or exercise).* (Participant B-6)

Theme 6: Weight Gain During Pregnancy

All participants experienced rapid weight gain with their pregnancy in the United States. They also learned that GDM, high blood pressure, cholesterol, and anemia were treatable if they followed a proper diet and exercise regime as instructed by their prenatal care provider. In addition, participants indicated that their weight gain could be attributed to the types of food available to them and the lack of exercise in the new country. Participant indicated that packaged foods were more readily available to them and were

more convenient to purchase and prepare. The vast majority of available processed foods offered convenience as they did not have to be cooked from scratch unlike the food they made in Mexico. Eight out of ten participants (B-1, B-2, B-3, B-4, B-5, B-7, B-8, and B-9) were more concerned about their current pregnancy weight gain than weight gained when they were pregnant in Mexico, as described below by the participants:

> Estoy más preocupada aquí [United States], porque he subido mucho de peso. Más que cuando estaba en México *(I'm more concerned here [in the United States], because I've gained too much weight. More than when I was in Mexico).* (Participant B-4)
>
> Aquí [United States] estoy más preocupada, porque uno sube mucho de peso aquí porque no hago mucho ejercicio y creo que es por la comida también" *(Here [in the United States], I am more concerned, because one gains a lot of weight, because I don't do much exercise and I think it's the food too).* (Participant B-5)
>
> Ya engordé por los embarazos." Yo no sabía que tenía que tener una atención de nutrición para saber balancear mis comidas, ya que tampoco sabía cómo balancear mis comidas *(I've gained weight because of my pregnancies. I didn't know that I had to have nutritional care to learn to how to balance my meals, as I didn't know how to balance my meals either).* (Participant B-1).
>
> Sí, estoy más preocupada . . . Aquí, sí, porque noto que aquí subes, por lo mismo que no estás muy activa, este subes rapidísimo de peso, o sea yo sí realmente ahorita, de por sí cuando tuve a mi hija subí de peso, no sé, igual dicen

> la alimentación o la comida, no sé que tenga, pero ahorita empecé yo mi embarazo con sobre peso entonces realmente, digo "chin, no me tengo que pasar mucho" *(Yes, I'm more concerned . . . Here, yes, because I notice that here you gain weight, the reason being that you're not very active, so there's a very rapid weight gain, in reality right now. When I had my daughter I gained weight, I don't know, they say it's the nutrition or food, I do not know what it is, but right now I have started my pregnancy overweight so, I tell myself geez, I can't overdo it).* (Participant B-7).

Two of the ten participants (B-6 and B-10) were not worried about weight gain, because they had been able to maintain their weight during both of their previous and current pregnancies. I observed that these two women did not physically appear to be overweight at the time of the interviews. One of the participants (B-6) indicated that she had been able to maintain a healthy weight, "igual porque yo no peso mucho" (*the same because I don't weigh much*).

Unexpected Observations

I observed highly significant nonverbal cues with all of the participants during the interviews. These were evident when I asked questions related to the household economy, food, purchasing items for their pregnancy, and their overall pregnancy experiences in the United States compared to when they lived in Mexico. All of the participants looked down as they took a moment before responding. They all then sighed as they thought about their experiences, which later revealed hardships and stress. While responding, the participants looked pained as they shared their experiences. Their tone of voice was lower and their speech slowed down. It was clear that these questions invoked some type of

emotional feeling, perhaps sadness, although it is difficult to know what the participants were truly feeling. When this happened, I allowed the participants to take their time before proceeding to the next questions and ensured that they were okay to continue with the interview, which they all were.

A notable observation was that two of the participants (B-3 and B-5) indicated that their husbands had been recently deported to Mexico. This had created some hardship during their pregnancies, as described here:

> Mi esposo andaba tomando y lo agarró la policía y lo echaron pa' fuera. Entonces ahorita estoy sola. Tengo conocidas. A veces uso el taxi para ir al doctor. Pero otras veces camino. Cuando me alivie voy a tomar el taxi para el hospital *(My husband was drinking and the police stopped him and they threw him out [of the country]. So I am now alone. I have acquaintances. Sometimes I use the taxi to go to the doctor. But at other times, I walk. When I deliver I'm going to take a taxi to the hospital).* (Participant B-3).
>
> Yo ahorita me la veo un poquito difícil porque no está mi esposo con nosotros. A él lo agarró la policía y lo echó para México. Ahorita se siente uno un poco solo, siempre ocupa uno como un brazo en quien platicar o cualquier cosa, pero siempre yo pienso que es su pareja de uno *(Right now I'm going through hard times because my husband is not with us. The police got him and threw him out, back to Mexico. Right now I feel a little lonely, one always needs a leaning arm to talk to or for anything, but I think it should be our partners for that).* (Participant B-5).

Another notable observation I made among all the participants was that they demonstrated strong resilience in a new culture that was unfamiliar to them. During the interviews, their resilience was highlighted in the ways they handled their adverse experiences and in how they coped with life's stressors, particularly during a pregnancy undergone in a new culture. In addition, these women demonstrated strong compassion and family values by taking the risk in immigrating to a new country while *luchando* (fighting) for a better tomorrow for their families. A common sentiment that participants shared was that they would do anything for their families, in particular, creating better opportunities for their children. This was the reason why they risked coming to a new country and culture. Their compassion for their families' wellbeing came first, before their own, regardless of the experiences they have undergone in the United States or back in Mexico. They are risk-takers, *Luchonas* (Fighters), for their families' futures and wellbeing, as indicated by their willingness to undertake a long journey from one country to another regardless of all the challenges and unknowns that they encountered. Participants indicated that anticipating a subsequent pregnancy became a source of motivation and a deciding factor for coming to the United States in order to give their child a better lifestyle and more opportunities. At the same time, those with children still in Mexico have to endure a split family situation.

Evidence of Trustworthiness

Trustworthiness

Trustworthiness refers to the following issues: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Trustworthiness or accurate reporting of the participants' accounts was critical, because interviews formed the sole

source of data in this study. For these in-person interviews, recordings were completed and then transcribed, word for word. Verbal pauses were removed for ease of readability. I reviewed all of the transcripts several times to ensure accuracy. The research protocol required that the recording and transcripts be stored in accordance with the study's consent form to guarantee trustworthiness. These documents are available and are being stored electronically in a secure manner, as required.

Credibility (Internal Validity)

Credibility (internal validity) refers to confidence in the 'trustability' of the findings (Lincoln & Guba, 1985). The credibility of this study entails authentication and accuracy of the data obtained from the participants through the recordings and the transcripts of each interview. Credibility in this qualitative inquiry was represented in the candid and thoughtful descriptions provided by the interview participants regarding their own experiences and thoughts around their pregnancy experiences in Mexico and the United States. All of the participants clearly stated that they remembered their actions, thoughts, and ideas during that time and were able to convey their ideas based on the questions asked (Patton, 2002). During the interviews, any questions asked by the participants were answered as succinctly as possible, and prompts were only used to clarify ambiguous responses. Participants were free to provide as long or short a response as they desired to ensure completeness, and minimal researcher intervention occurred during the interview (Creswell, 2012; Maxwell, 2009; Turner, 2010).

Transferability (External Validity)

Transferability (external validity) refers to the ability to generalize findings to other contexts (Lincoln & Guba, 1985). Transferability is established by providing

information about the content, data analysis, methods, and results in order to give readers the opportunity to make meaningful assessments of the work. The research findings from this study can offer insights on how culture and acculturation can influence the health behavior of pregnant, immigrant Latinas in Watsonville, California, particularly during pregnancy. More specifically, the results from this study have revealed how within 5 years of living in the new culture (in Watsonville, California), culture and acculturation have influenced diet, physical activity, and weight gain of pregnant immigrant Latinas of Mexican descent.

Confirmability

Confirmability refers to demonstrating that the findings were directed by the participants and not by the researcher (Lincoln & Guba, 1985). An audit trail documenting the processes used and the data collected provides dependability and confirmability. The interview data were collected, coded, analyzed, evaluated, and reported in a manner such that another researcher could easily follow the logic and the research model and ascertain how conclusions were reached. The qualitative data analysis was guided by the data analysis model developed by Miles and Huberman (1994) and the coding procedure formulated by Auerbach and Silverstein (2003). Confirmability was achieved in this study by ensuring that the experiences and thoughts of the research participants were not influenced by the researcher. The responses were represented *verbatim* in the analysis. All responses were subject to the same analytical process, and participants' responses were then combined to draw out codes and key themes.

Dependability

Dependability refers to demonstrating that the findings are consistent and could be repeated (Lincoln & Guba, 1985). While the responses would vary if this study were repeated with other participants, the methods could easily be replicated. Participant recruitment, qualification, and data collection processes were completed using the same steps for each participant.

Results

The findings reported in this chapter demonstrate that immigrant pregnant Latina women of Mexican descent who have lived in the United States for a maximum of 5 years are influenced by the new culture in the areas of their lifestyle choices, pregnancy and prenatal care, social support and relationships, nutrition and food access, and physical activity and weight gain during pregnancy. The study has shown that culture and acculturation affect maternal health during pregnancy as they influence factors like prenatal care, diet, physical activity, and weight gain. The study has also demonstrated that the participants went through a similar acculturation process in the United States in terms of maternity health, particularly in relation to pregnancy and prenatal care, nutrition, physical activity and weight gain. For example, all of participants adopted the practice of American prenatal care and biomedical labor and delivery processes as opposed to using traditional *sobadora* (folk healers) and *partera* (midwives). In addition, all of participants adjusted their diets/nutrition and physical activity based on the available resources in their new location. Consequently, the new culture and acculturation process contributed to a concern around weight gain among the majority of participants,

who indicated that they had experienced rapid weight gain during pregnancy in the United States as opposed to when they were living in Mexico.

Participants were recruited from Watsonville, California, an agricultural area, where many immigrants reside. Participants came from different geographical locations in Mexico. The results of the study may not be comparable to responses obtained in other agricultural areas or urban settings.

Research Question

The research question addressed by the study was:

RQ: What are the effects of culture on diet, physical activity, and weight gain during pregnancy among Latinas who have immigrated in the last five years and who currently live in Watsonville, California?

Responding to this question, the results indicated that the participants were influenced by the culture of Watsonville and the accompanying acculturation process, while losing some of the traditional cultural traits that had previously influenced their health and wellbeing during pregnancy, particularly in the areas of nutrition, physical activity, weight gain, and social and family relationships. All of the participants indicated that their pregnancies in the United States altered their cultural traditions in terms of prenatal care and delivery. In addition, the participants felt the need to adjust to new cultural social norms in order to assimilate into the American lifestyle, as demonstrated by their becoming more active consumers and relying on transportation to run their daily errands.

Summary

In this chapter, I have presented the data collection process to demonstrate the development of themes from responses and qualitative data analysis. Specifically, I

presented themes derived from participants' responses and developed codes derived from the original *verbatim* transcripts.

The chapter has presented a discussion of the pilot study, along with demographics of the participants. I have shown that the data gathering process was related to the participants in the study. I further explained the procedure for data analysis and the six themes that emerged were discussed. Moreover, I demonstrated and explained evidence of trustworthiness and explored the results in relation to the research question.

These research findings have demonstrated that culture exerts clear influences on health behaviors during pregnancy. They have also highlighted thoughtful concerns and suggestions of immigrant Latinas.

The information presented in Chapter 4 represents the collected data and findings from the interviews of 10 pregnant immigrant Latinas of Mexican descent living in Watsonville, California. The interviews explored the experiences and ideas of the participants and their perceptions of their pregnancy experiences in the United States and in Mexico. Participants provided a wide range of ideas and shared their thoughts, concerns, and suggestions concerning maternal health during pregnancy in a thoughtful matter.

In Chapter 5, more information will be presented related to the data collection and analysis. This information covers research findings, interpretation of the results, limitations to the study, recommendations for applying the research findings, and their implications for achieving positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Purpose of the Study

The purpose of this qualitative phenomenological study was to examine the effects of culture and acculturation on the diet/nutrition, physical activity, and weight of pregnant immigrant Latinas of Mexican descent residing in Watsonville, California. A phenomenological strategy was applied, based on face-to-face interviews held in the preferred language (Spanish) of the participating women to better understand their experiences of the ways in which culture and acculturation have influenced their health behaviors. This study contributes to the current literature on the influence of culture and acculturation on nutrition, physical activity, and gestational weight gain of pregnant immigrant Latinas living in the United States, and their potential impact on maternal and infant health outcomes. The Latino community is the fastest growing population with the highest birth rate in California and, more generally, in the United States. Considerable thought and attention should, therefore, be given to identifying influential factors contributing to maternal and infant health outcomes within this group.

Key Findings

While all of the participants in the study discussed aspects of their post-immigration lives that have been impacted by the host culture and acculturation in the United States, the analysis revealed that they shared very similar stories and experiences. That is, the women experienced their pregnancies within their traditional cultural context, while adapting to the American cultural context. However, their experiences relating to their nutrition, physical activity, and weight gain were remarkably similar. Marín and

Marín (1991) have described the importance of attending to Latino heterogeneity, as differences and similarities may exist across variables such as immigrants' documented and undocumented migration status that may influence the degree of their acculturation. Latinas targeted in this study were Mexican immigrants who met the eligibility criteria of the study as described in Chapter 3. According to studies by Akresh (2007) and Palreddy et al. (2010), time and language use may be considered proxy measures of acculturation in the United States. When individuals undergo an acculturation process after immigrating to a new cultural context, changes in their attitudes, behaviors, norms, and values can assume many forms. The findings of this study on the participants' experiences during pregnancy indicate that based on their pregnancy needs, their attitudes, beliefs, behaviors, norms, and values relating to nutrition and physical activity had morphed within 5 years of taking up residence in the United States. As a result of their pregnancy experiences in the United States, some of these women's traditional attitudes and beliefs had partially lost their relevance within the new host culture, or had simply been altered through their exposure to new ideas. These shifts may have occurred as a result of their interactions with institutions such as community agencies. They may additionally or alternatively have occurred as a result of observing others following different types of norms and behaviors within the host culture.

The 10 participants in the study shared the following characteristics. They came to Watsonville, California from Mexico; their average age was 31 years; they had all experienced pregnancy both in Mexico and in the United States; and they had completed up to the seventh month of their pregnancies at the time that they were interviewed for this study. On average, the women's education extended up to grade 5, although one

woman had obtained a degree from a university in Mexico. Six major themes were derived from the data. These were: (a) bicultural lifestyles; (b) personal adjustments relating to pregnancy and prenatal care; (c) low levels of social and relational support; (d) adjustments regarding diet, nutrition, food security, and access; (e) changes in the form and extent of physical activity in the United States; and (f) rapid weight gain experienced during pregnancies undergone in the United States (see Table 3).

Analysis of the Findings

Academic Contributions

There is limited research that has examined the impacts of culture and acculturation collectively on the three behaviors: nutrition, physical activity, and weight gain among pregnant immigrant Latinas of Mexican descent. Some studies have examined one behavior (i.e., diet) with acculturation among pregnant low-income women of Mexican descent (Harley, Eskenazi, & Block, 2005). Some have examined interventions to prevent GDM in overweight pregnant Hispanic women (Hawkins et al., 2015). Other research has examined the impacts of acculturation and diabetes on urban nonpregnant immigrant Latinas (O'Brien, Shuman, Barrios, Alos, & Whitaker, 2014).

This qualitative, phenomenological study was unique in that I studied the impact of culture and acculturation on nutrition, physical activity, and weight gain among pregnant immigrant Latinas of Mexican descent living in Watsonville. The findings from this study contribute to the existing literature on the impacts of culture and acculturation on health behaviors during pregnancy among immigrant Latinas of Mexican descent. This study revealed that in Mexico, participants shared similar life experiences with agrarian and animal husbandry activities, in addition to their rural backgrounds and

similar socioeconomic status. Moreover the study highlighted that regardless of the participants' similar life experiences, backgrounds, and specific origins within the Mexican Republic, all of them shared similar experiences relating to direct as well as indirect impacts of culture and acculturation during their pregnancies that influenced their health behaviors during their pregnancies in the United States.

This study has also demonstrated how culture and acculturation can exert an influence on individuals' multidimensional and dynamic development to meet their pregnancy-related personal and healthcare needs. These findings resonate with those of Fitzgerald et al. (2010) who have suggested that experiences of acculturation can differ among individuals and communities. For example, this study demonstrated that all participants had similar experiences relating to the Mexican healthcare system. Although they all had access to Mexico's Seguro Social (also known as Seguro Popular, which is the equivalent to Medi-Cal in California), they did not think too highly of it. While they all preferred to pay for a private doctor, the cost of doing so was prohibitive for most. For this reason, they all embraced health care plans (i.e., Medi-Cal) and services available to them during their pregnancies in the United States. In the following section, I discuss the various types of acculturation impacts experienced by participants in this study. These relate to the relationship between time and acculturation in the United States, as well as the ways in which culture and acculturation impact on nutrition, physical activity, weight gain, pregnancy care, and social support.

Culture and Acculturation in the United States

According to Akresh (2007), time is a proxy measure for acculturation that influences health behaviors in the United States. In addition, a number of studies have

found that an increase in the duration of residence in the United States is associated with negative effects on health behaviors (e.g., diet and substance abuse) and birth outcomes (low birth weight and prematurity) among Latinos (Bolstad & Bungum, 2013; Fitzgerald, 2010; Lara et al., 2005). Harley et al. (2005) found that Mexican-born pregnant women who had lived longer in the United States had diets lower in some important micronutrients than more recent immigrants. Findings from this study support the growing evidence of the negative effects of acculturation on the health of Mexican women, particularly during pregnancy (Harley et al., 2005). All of the participants in this study, regardless of their origins in rural or urban areas in Mexico, reported changes in their nutrition/diet and physical activity during pregnancy. In addition, the majority reported that they gained weight during pregnancy. Moreover, these changes, which were associated with culture and acculturation, occurred within 5 years of their immigration to the United States.

Participants recounted their experiences pertaining to various life necessities during pregnancy that were influenced by their new environment within a five-year period of taking up residence in the United States. These included food access, the type of diet/nutrition consumed, types of physical activity in which they engaged, the type of prenatal and pregnancy care they selected, self-observed rapid weight gain, and the type of social and relational support available in the United States. Based on their lived experiences during pregnancy, many of the participants had made less healthy choices resulting from the type of food to which they had access and the type and extent of their physical activity. As a number of researchers have pointed out, these may be factors contributing to adverse maternal and infant health outcomes (Barrera et al., 2012; Bolstad

& Bungum, 2013; Ceballos & Palloni, 2010; Fuentes-Afflick & Hessol, 2008b; Petti & Cowell, 2009). Ceballo and Palloni (2010) have described this phenomenon, observed among Latinos in the United States, as an "acculturation paradox" that reveals a correlation between adverse health impacts and increasing acculturation.

This study also revealed how participants engaged with the benefits and challenges posed by the host culture. At the same time, they recognized that while certain choices were preselected within the systematic structure of the host culture, other choices were selected based on their pregnancy needs. Consequently, they found that sustaining a healthy lifestyle as new immigrants in the United States posed some challenges resulting from pre-established structural and cultural dynamics and the prevailing lifestyle in the United States. This finding accords with those of a study by Pichon et al. (2007) that showed how the aspiration of adopting the "American" lifestyle constituted a deficit in relation to the culturally protective factors and practices cherished by Latinas. For this reason, some of the benefits associated with the host culture could potentially impact negatively on health-related behaviors. Participants indicated that their occupations (as strawberry pickers) in the United States provided them with the opportunity to become active consumers and providers for their families, alongside their husbands, in the United States, while also posing some challenges. For example, they indicated that although their financial capacities had increased enabling them to become active consumers in the American market, they nevertheless felt restricted and challenged because of the cost of living in the United States and their expenses relating to food, rent, daycare, pregnancy-related items, household items, and transportation. The majority of the participants in the study indicated that they were seasonal strawberry-picking farm workers in Watsonville.

The economy and the employment situation in the United States were also key factors contributing to acculturation and the emergence of a form of consumer ability among participants, in conjunction with challenges such as meeting living costs in the United States. Most participants were seasonal farm workers who picked strawberries in Watsonville, earning, on average, approximately $427 per week (Human Resource Manager, BerryCentro, personal communication, November 23, 2015; Jones, 2013). Participants reported that their earnings from such activities exceeded their earnings in Mexico. Thus, they acquired the ability to engage in the American market within the limitations of their incomes. Participants' earnings did not allow them "spending power" at the individual level, but at the household level, their families had a little more money than they had in Mexico. Participants recognized that living in the new host culture gave their families more money, but living costs (e.g., rent, bills, and food) and expenses (e.g., daycare, transportation, and car seats) were expenses that had to be considered.

In Mexico, there were certain behaviors that enabled participants to maximize and expand their budgets such as growing and selling items such as *milpas*, corn, chickens, pigs, and cows. In the United States, these behaviors were not possible due to their new living environment and lifestyles. Consequently, this led participants to adopt new consumer practices in the United States in order to eat and assimilate to the consumer market there. Moreover, in the United States, participants were able to experience a greater consumer ability to have goods such as cribs, car seats, baby clothes, maternity clothes, and toys and gadgets for their babies. Their purchasing experiences in Mexico were more restricted in that similar goods were limited or simply not available to them (i.e., cribs, baby toys, and clothes). In addition, as new residents of the United States,

participants deliberately and purposefully adopted new and unanticipated roles and responsibilities in order to be in compliance with California law. This included abstaining from driving without a driver's license and purchasing a car seat to bring a newborn baby home from the hospital.

Nutrition

All of the participants in this study reported nutritional changes as a result of culture, acculturation, food security and access, and increased consumer ability. The majority of the women indicated that diet/nutrition was a key factor that contributed to their rapid weight gain during their pregnancies in the United States. This view is supported by the findings of Fuentes-Afflick and Hesson (2008b), Kaplan et al. (2001), and Page (2004), who have all demonstrated that acculturation is accompanied by changes in attitude, behaviors, norms, and values that influence health behaviors. Akresh (2007) and Bolstad and Bungum (2013) have shown that dietary change within the Latino immigrant population is a strong indicator of acculturation. The participants in my study reported changes relating to diet/nutrition, food access, types of food ingredients available, as well as modified tastes and food preferences, thus supporting this finding.

Although, most participants sought to consume the same traditional foods that they had previously consumed in Mexico, they indicated that the ingredients of these foods were more processed in the United States. This view is supported by García et al. (2013) and Batis et al. (2011), who have demonstrated that the dietary habits of Latina immigrants in the United States are not favorable to their health. Food security and access were experienced by the participants in my study as a culture shock, because most of the women had endured food insecurity in Mexico. At the same time, they produced most of

the food they consumed in Mexico themselves. However, in the United States this behavior was suspended because of their new lifestyle and environment. The women also began to consume new kinds of vegetables that aroused their curiosity, and they subsequently adjusted their diets to incorporate these new items, including iceberg lettuce, spinach, cauliflower, and kale. The food purchasing power that they acquired through employment and access to community resources (food banks) in the United States fostered their ability as consumers. Participants reported that their core diet was adjusted and altered because of their new location (Watsonville, United States) and the food types and products available for purchase. This finding is supported by Lindsay et al. (2009) who have shown that immigrant Latina mothers face numerous barriers when attempting to establish and maintain healthy eating practices in the United States. It is further supported by Lindsay et al. (2009) who used an EMT framework to examine how the environment and culture contributed to restrictions on the eating practices of immigrant Latinas immersed within a new culture.

This study extends knowledge on how individuals' access to food and other products in the United States is determined by their environmental locations and that of food stores within walking or driving distance. It further reveals that food adjustments occur within a short time frame of living in the United States. At the same time, these findings show that pregnant immigrant Latinas had to transition abruptly from their food gathering and traditional plant-based diet and have been forced to adopt America's food culture, incorporating processed foods and semi-homemade food items into their daily diets. Therefore, the findings of this study indicate that participants may need to advance their understanding on which food types, products, and ingredients are healthy to

consume during pregnancy while living in the United States. For instance, learning to avoid processed and prepared foods can reduce the amount of sodium and sugar in-take during pregnancy. In addition, participants can benefit from learning to prepare and utilize healthy food products and ingredients (e.g., cauliflower, broccoli, iceberg lettuce, spinach, and kale) that are new to them in the United States.

Physical Activity

Walking was the preferred form of physical activity for all of the participants, both in Mexico and in the United States. However, all of the participants reported a decrease in the duration and types of physical activity that they performed in the United States compared with their physical activity in Mexico. In addition, participants reported that in the United States it was easier to adopt a sedentary behavior routine at home by watching more television compared with their situations in Mexico. These finding are supported by Fitzgerald (2010) who reported that immigrant Latinas tended to be more physically active in their home countries in contrast to the United States, where they engaged in a more sedentary lifestyle (e.g., walking less when performing errands, being more dependent on transportation, and watching television).

The type of employment that the participants obtained in the United States was more rigorous and physically demanding, and they had less autonomy over their schedules compared with their labor in Mexico. This was because most participants were strawberry-picking farm workers and spent a significant portion of their time at work (on average, from approximately 6 a.m. to 6 p.m.) before, during, and after their pregnancies in the United States. Therefore, their physical activity in the United States was primarily attributed to their employment occupation rather than being done in a social manner with

neighbors or family members in Mexico. Participants indicated that at a later stage of their pregnancies, when they stopped working in the fields, their physical activity was drastically reduced as they were confined to their homes. This finding is aligned with that of Fitzgerald (2010) who observed that immigrants' physical activity was reduced in the United States because of busier lifestyles, the change of climate, and neighborhood safety concerns. Lynch et al. (2012) reported that Hispanic women were less likely to meet the physical activity guidelines for pregnancy developed by the American College of Obstetricians and Gynecologists (Artal & O'Toole, 2003). However, these rates increased when activities of any type such as household/caregiving activities were also considered. In this study, participants reported that household and caregiving activities provided physical activity, although most exercise was associated with working in the strawberry fields.

Participants explained that in Mexico, their physical activity (i.e., walking) was integrated into their daily errands and obligations. They walked to reach the places they needed to go to every day such as taking their children to school and buying groceries. They also walked to their workplaces, and to the houses of family members and friends to visit them. Although the women's occupational activities were arduous in the United States, their daily activities (outside of working in the strawberry fields) were more sedentary compared with these activities in Mexico. Routine activities in the United States included watching more television, staying home more, walking less, and conforming to prevailing daily schedules (going to work early in the morning, coming home late in the afternoon, and then resting before repeating this routine the following day). Investing money to engage in physical activities was perceived by the women as a

pleasure-oriented luxury because of their competing priorities such as paying rent and buying clothes and food in the United States. The issue was not one of a desire to be and remain physically active; rather, it was one of time allocation for their newly adopted daily schedules, occupations, and responsibilities in the United States compared with those in Mexico. Wallace and Castaneda (2010) similarly found that regular structured exercise was not a top priority in the lives of half of the Mexican female immigrant population (49%), representing an additional risk factor for cardiovascular disease. Participants' income status may also have influenced their time engagement in leisure-related physical activity. According to the CDC MWR QuickStats (2016), adult incomes in the United States determine the likelihood of meeting federal guidelines for aerobic physical activity (≥ 150 minutes of leisure-time activity per week). . The data revealed that the lower people's incomes, the less likely they are to meet physical activity guidelines (CDC MMWR QuickStats, 2016). As a result of living in the United States, participants drastically reduced their social and leisure physical activity time compared with this time allocated for these activities when living in Mexico because of constraints of time and opportunities in the new host culture. Although, participants were physically very active while working in the fields picking strawberries, their leisure time for physical activity decreased in the new host culture.

High dependence on transportation in the United States, in contrast to Mexico, also reduced opportunities to be physically active. Participants indicated that in the United States, transportation (driving a vehicle) was an integral aspect of their daily lives as it provided connectivity to various destinations associated with work, prenatal appointments, laundry, and grocery shopping. This dependence on transportation resulted

in fewer opportunities to engage in physical activities compared with such opportunities in Mexico where transportation was not a central part of the women's daily lives. The CDC Transportation Recommendations (2016) have indicated that physical activity and active transportation have declined among the current generation compared with previous generations. Many of the participants relied on their husbands for their transportation in the United States. This was because of a fear of driving, the inability to drive, or simply because they did not have a driver's license. As a result, the majority of the participants found themselves to be dependent on their husbands' availability and schedules for running their personal errands and attending prenatal appointments. This also applied to their availability for interviews conducted for this study. In essence, participants found themselves socially confined to their homes and work because of their inability to drive. Aboelata and Navarro (2010) reported that land use, transportation and safety have emerged as critical levers for improving environments for eating and physical activity in California. According to Smart (2015), living in an immigrant neighborhood strongly influences immigrants' travel behavior. This study highlights the importance of transportation in the United States as a valuable resource into individuals' lives. In addition, this finding may suggest that social and environmental factors relating to the participants' neighborhoods could play a critical role in structuring travel decisions.

McAlexander, Mama, Medina, O'Connor, and Lee (2012) reported that Latinas' lack of familiarity with the built environment in the United States was associated with the level of their physical activity. Participants observed that their unfamiliarity with their new environment (their living surroundings) made them less likely to engage in social and leisure related physical activity. These findings are supported by those of Evenson et

al. (2009) who applied a socioecological framework to understand the barriers that prevented Latina, Black, and White pregnant women from being physically active in the United States. The Latinas in their study indicated that a number of barriers, including neighborhood or environmental (e.g., weather, season, and lack of outdoor space) hindered them from being physically active in the United States.

Lee et al. (2012) found that the lack of neighborhood elements such as traffic lights, sidewalks, crossing aids, street amenities (e.g., planters, benches, and tables), and travel lanes in areas where Latinas women live decreases their ability to adopt and maintain physical activity. The ecological model theory of physical activity identifies environmental influences that shape physical activity such as micro-environmental factors (e.g., street lights and sidewalks) that can create favorable or unfavorable opportunities for individuals' physical activity (Lee et. al., 2012). The lack of opportunities for physical activity among participants in this study may suggest that their built environment may have been unfavorable for social and leisure related physical activity.

The majority of the participants in this study worked as strawberry pickers in Watsonville. This type of job was physically exhausting and demanding on their bodies, requiring them to bend their lower backs to handle and pick ripe strawberries. Because strawberries are very tender, they tend to easily bruise and become discolored if they are squeezed at all. Therefore, they require gentle handling by the pickers as they move through the strawberry fields. Once picked, the strawberries are deposited in small baskets placed inside a larger rectangular box that is filled. This process is repeated, with the women working daily for a period of 8 to 12 hours during peak seasons before,

during, and after their pregnancies. In this study, participants were physically active as a result of their seasonal agriculture job, and household and caregiving activities. Time for social and leisure related physical activities was limited in the United States compared with time for these activities in Mexico because of the women's family obligations and lack of time in the United States.

Weight Gain

The majority of the participants experienced rapid weight gain during their pregnancies in the United States compared with their pregnancies in Mexico. They further reported becoming more aware of the association between weight gain during pregnancy and chronic diseases (e.g., GDM, high blood pressure, high cholesterol, and anemia) after coming to the United States. The women believed that lack of exercise and the types of food they consumed in the United States were key factors contributing to rapid weight gain during their pregnancies in the United States. This finding is in consonance with that of Wallace and Castaneda (2010) and García et al. (2013), who found that poor diets and lack of physical activity increased the risk of obesity and overweight among Latinas in the United States. The majority of the participants reported that they were more concerned about weight gain during their current pregnancies in the United States compared with how they felt about the weight they gained during their pregnancies in Mexico. This finding supports that of the California Department of Public Health, Maternal and Infant Health Assessment Survey (2011), which revealed a tendency toward excessive weight gain and overweight or obesity among Latinas before and during pregnancy, with attendant risks of health complications for mothers and

infants. Only two out of the ten participants did not express any concern about their weight gain in the United States.

Findings from this study could prompt further investigation as to why certain pregnant Mexican immigrant women experienced rapid weight gain during their pregnancies in the United States compared with their pregnancy experiences in Mexico. It may also indicate the need to inform and educate public health professionals and health care providers on the importance of adopting and promoting traditional and time-tested non-medical Latino customs and traditions that have been demonstrated to be effective and that have enabled women to remain healthy in Mexico. For example, many of the participants indicated that they walked more and consumed fewer processed foods when they were in Mexico. These findings also suggest that women cannot continue to maintain cultural traditions related to food production and physical activity in the same way as they did in Mexico.

Pregnancy Care

In this study, I have explored, in detail, how individuals replaced their traditional customs regarding pregnancy and prenatal care after moving to the United States. Studies have shown that acculturation is accompanied by changes in attitudes, values, customs, beliefs, and behaviors in relation to a new culture that may influence health behaviors (Fuentes-Afflick & Hesson, 2008b; Fitzgerald, 2010; Kaplan et al., 2001; Page, 2004). More specifically, this study has also demonstrated that pregnant participants acculturate with respect to certain aspects of American society to fulfill their personal needs within a short time frame. Fiztgerald (2010) has suggested that acculturation is a non-linear

process without time segments; in fact, it occurs in several phases throughout immigrants' life course in the new host culture.

Almost all of the participants stated that they had undergone personal and cultural adjustments relating to their pregnancies and prenatal care in the United States. These personal and cultural adjustments support the literature on the process of acculturation and how it may influence health-related behaviors (Fuentes-Afflick &Hesson, 2008b; Fitzgerald, 2010; Kaplan et al., 2001; Page, 2004). For example, in Mexico, the majority of the participants relied on a *partera* (midwife) and *sobadora* (folk healer) for their pregnancy and prenatal care, and during labor, as opposed to being attended by an obstetrician/gynecologist (OB/GYN) in the United States. In the host country, they unhesitatingly adopted American prenatal practices for their prenatal care. The American system and practices relating to prenatal care were perceived to be superior to the traditional system and practices available in Mexico, because they entailed more extensive care, screening, and management during pregnancy. Callister and Birkhead (2002) have emphasized that acculturation is an important variable when Mexican immigrant childbearing women receive health care practices. Participants noted that through their participation in the American health care system, they acquired information and knowledge regarding preventive medical services and health education in their native language (i.e., Spanish and/or Mixteco). This boosted their self-esteem, enhancing their trust in their OB/GYN doctors. These benefits outweighed the challenges of obtaining health coverage within a complex health care system. The women experienced a high degree of satisfaction and comfort from the prenatal care provided to them in the United States. This suggests the participants seamlessly adopted America's health care and

services during pregnancy, and simply dropped some of their Latino cultural traditions (i.e., *sobadora* or *partera*) in the United States. In California, birth centers and hospitals (Kaiser Permanente) provide *partera* (midwives) services for prenatal care and for labor and delivery that could potentially give immigrant Latinas the experience of a natural birth similar to the one they had in Mexico (A. Silva, personal communication, June 1, 2016). Kaiser Permanente (2015) provides midwife-led care services to support women through the journey of childbirth. The organization is respectful of individuals' beliefs and choices, offering personalized experiences of care and empowering individuals to make informed decisions about their care. Sutcliffe et al. (2012) have found that midwife-led care for low-risk women is better for a range of maternal outcomes, resulting in a reduction in the number of procedures during labor and increased satisfaction with care. Moreover, they did not find any negative impacts on mothers and infants receiving midwife-led care (Sutcliffe et al., 2012).

Social Support

The study has also yielded insights regarding the extension of social and relational support. Rasmussen and Yaktine, who edited a publication of the Institute of Medicine & National Research Council Committee of the National Academies (2009), have suggested that a lack of social support during pregnancy could lead to increased stress that could in turn contribute to weight gain. A study by Thornton et al. (2006) indicated that social support was required to promote healthy lifestyles and improve gestational weight gain during pregnancy and the postpartum period among Latinas who had recently immigrated to the United States. Weight retention during and after pregnancy could be a risk factor for obesity and developing chronic diseases. López, Bryant, and McDermott (2008) have

shown that lack of social support constrains Latinas from being physically active in their daily lives in the United States. Harley and Eskenazi (2006) conducted a study in Salinas, California (along the Central Coast) where Watsonville (the site of this study) is located. The authors found that increased social support appeared to prevent some of the negative pregnancy behaviors that are reinforced over time among Latinas of Mexican descent in the United States such as diet quality, use of prenatal vitamins, and decreased likelihood of smoking during pregnancy.

Participants described pregnancy-related social and relational support as a traditional cultural necessity that drastically increased during pregnancy, and was provided by close family members and prevailed among intergenerational maternal kin (a woman's grandmothers, mother, and mother-in-law) in Mexico. In addition, participants indicated that the social and relational support obtained in Mexico was critical to them during pregnancy, because it was grounded in their Latino cultural values (*familismo, comadrazgo, compadrazgo, respeto, simpatia,* and *personalismo*). However, all of the participants reported a lack of social and relational support available to them during their pregnancies in Watsonville. Moreover, participants indicated that their Latino cultural values were either limited or absent in the United States, which increased the realization of not having social support during pregnancy. Each of these Latino cultural values has been identified by researchers as key qualities that should be integrated while promoting healthy behaviors and delivering health information and services to Latinos (Adames et. al., 2014; Comas-Diaz, 2013; Edwards & Cardemil, 2015; Garza and Watts, 2010; Lugo Steidel, & Contreras, 2003).

Participants emphasized that their *familismo* and particularly their maternal "triad" relationships (with their grandmothers, mother, and mother-in-law) were deficient in the United States. These relationships provided reliable and sustainable sources of social support besides that provided by their husbands during their pregnancies. *Familismo* refers to the value and status of immediate and extended family relationships (Lugo, Steidel, & Contreras, 2003). In the United States, the concept of *familismo* was challenging for participants as the majority of them still had their immediate and extended families in Mexico. *Familismo* is possibly one of the most significant values of Mexicans (and most Latino) cultures, as the emphasis is on the group, not the individual, and on family commitment, obligation, and responsibility (Rayle, Sand, Brucato, & Ortega, 2006). *Familismo* represents the importance of family in the Latino household, and that support is generally found in immediate and extended family and social support networks (Rayle et al., 2006). This is supported by the cultural values of *respeto, simpatia,* and *personalismo* that guide interpersonal interactions, both within the family and with extended family members (Edwards & Cardemil, 2015). These Latino cultural values define and outline the types of interactional styles and can serve as a guide for navigating hierarchical relationships among family members (Edwards & Cardemil, 2015). Therefore, when major life events like pregnancy transpire, the immediate and extended families are involved in the process.

Participants spoke nostalgically about the supportive role played by their mothers, grandmothers, and mothers-in-law during their pregnancies in Mexico. Participants reported that in Mexico, their grandmothers, mothers-in-law and mothers cared for them constantly by ensuring that they ate proper meals (e.g., *caldo de pollo* or chicken stews),

were not physically exhausted with their daily household tasks, and drank the proper teas. They provided advice on prenatal care, and soothed the women's fears about pregnancy, labor, and delivery. In addition, in Mexico, maternal kin had provided them with informational, emotional, and practical support during their pregnancies. For the majority of the participants, half of their nuclear families had remained in Mexico which further increased their *familismo* deficit. Overall, they found themselves feeling alone in the United States. This was because these key sources of social and relational support were absent. Moreover, these forms of support are aligned with traditional Latino cultural conceptions that emphasize and prioritize the warm interpersonal relations of *familismo* as a highly valued cultural ideal in Mexico.

The *comadrazgo* (co-mothering) and *compadrazgo* (co-fathering) concepts were easier to apply with their *paisanos* (fellow Mexicans) such as neighbors, friends, and relatives in the United States. The Latino value of *comadrazgo*/*compadrazgo* is similar to the idea of extended family members who are as close as true blood-related family members (Comas-Diaz, 2013; Rayle et al., 2006). The interpersonal interactions that are developed within the *comadrazgo*/*compadrazgo* relationship are also guided by the Latino cultural values: *respeto, simpatia,* and *personalismo.* Among Mexicans, the *comadre* and *compadre* figures have an important cultural role and responsibility, because a special brotherhood and sisterhood are established, and individuals are seen as confidants and advisors on personal wellness (Comas-Diaz, 2013; Rayle et al., 2006). For c*omadres,* a special bond allows women to help each other survive life's daily struggles. Significant *respeto, simpatia,* and *personalismo* is shared between them, and shared, they celebrate and support one another unconditionally, forming alliances that last a lifetime

(Adames et. al., 2014; Comas-Diaz, 2013; Edwards & Cardemil, 2015; Rayle et al., 2006). Building their *comadrazgo* and *compadrazgo* relationships within the new host culture was challenging for participants as this required establishing and building a support network of individuals who could be trusted and who would take on the role and responsibility of a *comadre* or *compadre* in accordance with their cultural traditions.

Page (2004) found that a high degree of stress was linked to low levels of social support that could impact both maternal and fetal outcomes. This study revealed that all of the participants had moderate or low levels of social support available to them, and experienced high levels of stress because of their nuclear family circumstances. For example, two of the women's husbands were deported, contributing to a significant degree of instability and stress experienced during their pregnancies. Especially during pregnancy, the development of warm and interpersonal social and family relationships, constituting a cultural ideal, can help to significantly reduce stress. Participants' experiences regarding lack of social support further revealed the need to address non-medical factors that contribute to stress reduction, even when individuals have limited access to social and relational support resources. There is evidence that the provision of social support has positive effects on birth outcomes, because it creates a buffer against stress (Wakeel, Wisk, Gee, Chao, & Witt, 2013). These findings support the need to explore appropriate ways for public health professionals and health care providers to invest in social support programs (e.g., a *comadrazgo* program) that can provide the protective effects experienced by Latinos when living in Mexico and create a buffer against stress experienced by pregnant, immigrant women living in a new country. The *comadrazgo* program could support immigrant women during pregnancy, assisting them

to make a smoother adjustment within the new host culture, and, especially, obtaining support from other pregnant immigrants. The *comadrazgo* program could incorporate the important Latino cultural values, as previously discussed.

Disconfirmed Findings

Page (2004) and Oza-Frank and Cunningham (2010) have suggested that a higher degree of acculturation over a longer duration (between 10 and 20 years) is an indicator of high prenatal stress and overweight in the United States. Several studies have indicated that increased duration of residence in the United States is associated with negative effects on health behaviors that have deleterious effects on the health of Latino immigrants (Akresh, 2007; Bolstad & Bungum, 2013; Ceballo & Palloni, 2010; Fuentes-Afflick & Hessol, 2008a; Fuentes-Afflick & Hessol, 2008b; Fitzgerald, 2010; Lara et al., 2005). In this study, I was able to demonstrate that within a period of 5 years of taking up residence in the United States, women experienced prenatal stress and rapid weight gain during pregnancy. The participants considered their weight gain during their pregnancies in the United States to be greater compared with their weight gain during their previous pregnancies in Mexico because of a number of factors. These included the types of food that they consumed, their increased access to processed food, and their adoption of a sedentary lifestyle and reduced physical activity in the United States. In addition, they experienced prenatal stress as a result of interrupted family dynamics and the consequent restriction of social and relational interactions attributable to their immigration status in the United States.

Theoretical and Contextual Applications

The Ecological Model Theory

The EMT was used as a theoretical framework for examining the influences of culture and acculturation on pregnant individuals' health behaviors across a wide range of areas, both directly and indirectly. The application of the EMT in this study facilitated an examination of the interactions between individuals and their environment, thereby enhancing understanding of contributing factors such as the roles, values, norms, and relationships that stimulate personal development. In this study, the application of the EMT specifically shed light on how environmental forces influenced the development of health behaviors from the onset of an event in an individual's life (Bronfenbrenner, 1979, 1985, 2000). It also provided a foundation for examining and analyzing how human behaviors are influenced by the intertwining of a culture with different ecological systems that interact with the individual. Moreover, the use of the EMT to guide the formulation of interview questions aimed at examining the role of culture on diet, physical activity, and weight among pregnant Latina immigrants in Watsonville, California, created a valuable opportunity for understanding the specific influences of culture and acculturation on this group of women.

The EMT is a theory that posits five levels, namely, the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner & Mahoney, 1975; Bronfenbrenner, 2000). These EMT constructs, highlighting multiple social contexts and the interdependencies among these contexts, helped to explain the personal development of immigrant Latinas during their pregnancies in Watsonville. All of the

participants were found to be influenced by these continuous and multilayered ecological systems. The results of applying this theoretical model are summarized below.

The application of the EMT in this study demonstrated bidirectional influences exerted on participants through each of the ecological "system layers." Each layer created a ripple effect extending through the other environmental layers that equally influenced participants' choices of health behaviors (Bronfenbrenner, 2000). The effects of various influences from the system layers on participants' health behaviors, in turn, affected their outcomes relating to nutrition, physical activity, and weight gain in the individual layer. This finding supports Bronfenbrenner's (1975) contention that environmental system layers (microsystem, mesosystem, exosystem, macrosystem, and chronosystem) affect individuals.

All of the participants were influenced by systematic structures at the levels of the macrosystem and exosystem, both in Mexico and in the United States. At the macrosystem level, they were influenced by cultural beliefs, values and customs, history, governing laws, the economy, the political system, and social conditions. The cultural, historical, and generational heritage with which they were endowed at the level of the macrosystem defined which cultural values they adopted and which ones they rejected during their pregnancies vis-à-vis other system layers of the new host culture. At the exosystem level, participants were influenced by their husbands' work environments, parents, mass media, neighborhoods, grandparents, community health and welfare services, housing, retail stores, and food outlets. At the mesosystem and microsystem levels, environmental structures reciprocally influenced their daily routines and choices.

The chronosystem level was associated with temporal transitions and changes across the participants' lifespans.

The macrosystem was the most influential level. This is because participants' traditional cultural beliefs and values, which determined how they dealt with influences from the other ecological systems, were formed at this level. These cultural beliefs and values shaped their health behaviors which, in turn, impacted their health and wellbeing during their pregnancies in the United States. Consequently, culture played a continuous and influential role at every level of the ecological system (e.g., lack of social support, the economy, and transportation). For example, the lack of social support that participants experienced in the United States required them to adapt to and/or change their perspectives, or how they handled the dearth of social and relational support. These types of experiences demonstrated how environmental forces, identified through the application of the EMT, influenced participants' behaviors as they developed within a new host culture. Figure 3, below, which I developed based on my findings, illustrates how the participants in this study experienced bidirectional influences emanating from the multiple layers of the environmental system during their pregnancies, and how these influenced their health behaviors.

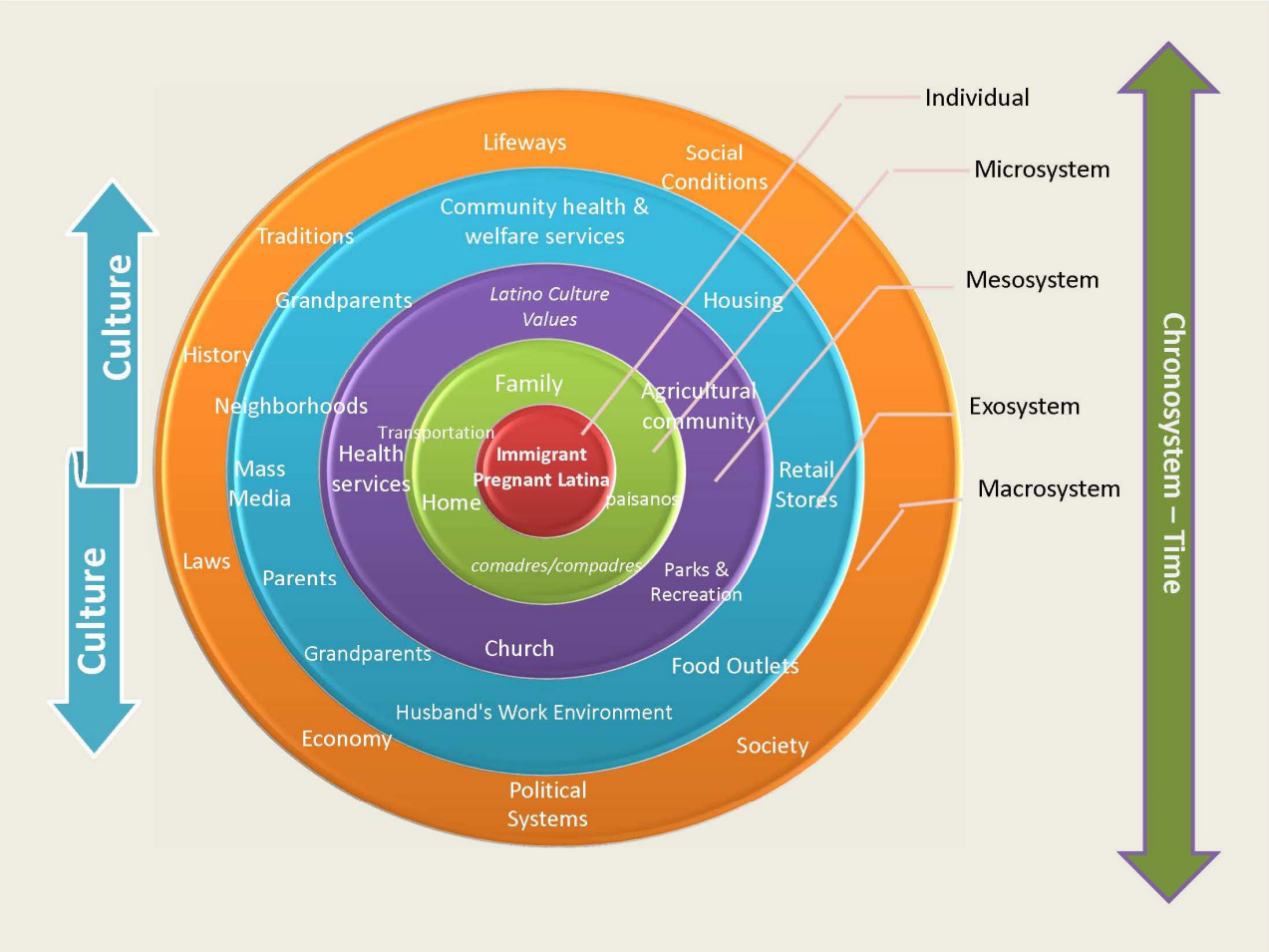

Figure 3. Ecological model theory of pregnant immigrant Latinas in Watsonville, CA.

Limitations of the Study

The results of this study should be considered in light of some limitations. As with most qualitative studies, the number of participants was relatively small. Participants were volunteers who met the study's criteria, so the findings are limited to the preselected categories of participants required for the study. This limitation is significant because of the specific participation criteria for that did not apply to all pregnant immigrant Latinas.

Additionally, not all of the pregnant immigrant Latinas residing in Watsonville, California were aware of this study or had the opportunity to participate. Moreover, because the study was limited to women living in Watsonville, the views presented may have been influenced by the women's location in a small agricultural town and may not, therefore, have been applicable to a larger setting.

Researcher bias was another limitation that was related to trust and research rigor. However this is considered an inevitable part of qualitative research that entails an evolving understanding and analysis of a phenomenon (Strauss & Corbin, 1998). However, I am aware that my legal status and attainment of a doctoral education may have exerted some sort of unintended pressure on the participants. While I attempted to exhibit cultural humility to ensure cultural understanding and competency at all times, it may not have always appeared that way to the participants. Hook, Davis, Owen, Worthington, and Utsey (2013) conceptualized cultural humility as the "ability to maintain an interpersonal stance that is other-oriented (or open to the other) in relation to aspects of cultural identity that are most important to the [person]" (p. 2).

The findings of this study are based on information obtained from a finite group of participants in relation to a specific event and during a specific time frame. While the analysis was focused, it was also subjective, and the results obtained for this population may not have been applicable to all pregnant immigrant Latinas. In addition, the findings are based on a nonrandom sample of pregnant immigrant Latinas, living in Watsonville, who were initially recruited through churches, community health organizations, and local retail stores. This type of sampling and the small sample size could be considered limitations in relation to the generalizability of the findings.

The opinions and responses of women who participated in the interviews may, in some cases, have been influenced by their weak capacities of recall. Furthermore, the women recruited for this study could have been those who were more concerned, in general, about maternal and infant health issues and healthy lifestyles. Another limitation relating to the data was that all of the participants lived in Watsonville, and were not, therefore, representative of all pregnant Mexican immigrants either in California or in the United States. It is critical to acknowledge that Latinos are not a homogenous group and that the impacts of the acculturation process are likely to vary according to factors such as the migration time frame, socioeconomic status, and native origins. The current study was limited in its capacity to assess factors relating to culture, acculturation, diet, exercise, and weight gain.

Recommendations for Future Research

This study was intentionally limited in scope and relied on the participants' articulation of their candid views and on their detailed responses. However, the research findings can be used as an entry point into other research contexts to explore the impacts of culture and acculturation on maternal and infant health outcomes among pregnant Latinas who have recently migrated to the United States. Further cross-cultural research is required to ascertain the most appropriate and effective health education and interventions that can be promoted for pregnant Latina immigrants who only speak Spanish and indigenous dialects. Additional qualitative studies could be conducted within this population to explore and validate the most effective ways for public health personnel and health care providers to encourage the adoption by these women of healthy behaviors during their pregnancies.

A broader range of participants could be recruited within future studies. For example, direct recruitment could be conducted through street outreach to increase opportunities for direct contact with potential participants (Gul & Ali, 2010). Additionally, participants could be recruited indirectly through contacts established with potential participants using various health communication approaches (Gul & Ali, 2010). For example, a broad range of advertisements in Spanish and English could be disseminated through mass and social media. Incentives are commonly used as a way to engage participants. Therefore, providing each participant with a $20 gift card, day care service, and/or travel reimbursement could encourage the participation of a more diverse population.

Positive Social Change

To create positive social change within vulnerable populations like pregnant immigrant Latinas in Watsonville, California, the EMT can be applied as a framework for directing efforts that focus on the interactions between individuals and their environment to ensure the most optimal health outcomes for individuals. The results of this study showed that of all the systems, the exosystem and macrosystem levels appear to have the greatest influence on the diet/nutrition, physical activity, and weight of pregnant immigrant Latinas. Furthermore, the study provided insights on how health behaviors during pregnancy are influenced by culture and acculturation, social and economic opportunities, the resources and services available within a community, and the nature of social interactions and relationships, to name a few. For this reason, it is critical to also focus on other system levels (i.e., the mesosystem, microsystem, and individuals) as birth rates continue to increase among immigrant Latinas in Watsonville, California. The EMT

can consequently be applied to elucidate the various bidirectional environmental forces that influence health behaviors.

With this in mind, four recommendations are provided from which positive social change can commence. These recommendations are within the EMT framework that will promote and enhance social and public health gaps for pregnant immigrant Latinas, enable identification of community-defined promising practices, and improve the quality of life for immigrant Latinas in Watsonville, CA.

Recommendation 1: Promote Research Findings

I will be disseminating the findings of the study to professional peers via professional and academic conferences and to the general public through Watsonville community forums and social media. In addition, I will organize and host a small community forum in Watsonville to bring together members of the community who are interested in public health, maternal health, and immigrant health to share the findings of this study.

I currently work for the CDPH, specifically, the Maternal, Child and Adolescent Health (MCAH) Division within CDPH's Center of Family Health. I will host a brown bag lunch at the Center to share the findings of this study with key leaders and subject matter experts with an interest in this field. In addition, I will invite experts from our sister program within the Center, namely, the Women, Infants and Children (WIC) Supplemental Nutritional Program, along with other key subject matter experts from the Nutrition Education and Obesity Prevention Branch to attend. The findings of the study will also be disseminated via oral and poster presentations at the annual meeting of the Association of State Public Health Nutritionists (ASPHN) to be held in October 2016.

Moreover, I have registered to make a presentation at the 2016 American Public Health Association to be held in Denver, Colorado and at the 2017 Biennial Childhood Obesity Conference that will take place in San Diego, California.

The list of invited guests for the community forum in Watsonville, California will include the following: study participants and their families, local government health and social professionals, members of community-based and faith-based organizations, health care professionals, food merchants, local media (Univision) and family advocacy groups. In addition, specific organizations will also be invited from: St. Patrick's Parish, Our Lady Help of Christians; Our Lady Assumption Church; Mi Pueblo Food Center; D'la Colmena Store; Salud Para La Gente (a community health clinic); Watsonville Family YMCA; Second Harvest Food Bank; the City of Watsonville (Parks and Community Services, City Hall); Clinica del Valle del Pajaro (a community health clinic); Watsonville Community Hospital; Watsonville Housing and Redevelopment; the Family Services Agency of the Central Coast; the United Farm Workers' Union; Santa Cruz County Health Services Agency; the local Calfresh and Women's, Infant and Children agencies; La Manzana Community Resources (a community center); and local strawberry production companies such as Berry Centro, Beach Street, and Lakeside Organic Gardens. I will also invite people from local community resources and services related to nutrition, physical activity, weight gain, and pregnancy to attend and display their services.

The community forum will be held in the social events hall of Our Lady Assumption Church. The purpose of the community forum is to present the findings through a presentation and foster a dialogue of the study's findings. The findings will be

presented as a short PowerPoint presentation and highlighted in a one-page handout that will be disseminated to the guests for their reference. I will provide some light refreshments and healthy Mexican appetizers for the guests. The community forum will also provide an opportunity to promote local media coverage of public health, maternal health and immigrant health issues to broaden public understanding.

I have established social media channels (Twitter and Instagram) in order to share key findings with the public. To increase social media awareness, I will create an infographic that highlights the findings to provide awareness and education on the impact of culture and acculturation among immigrant Latinas in Watsonville, California. As a result of these outreach efforts to share the findings of this study, individuals and organizations can gain information, education, and awareness about the cultural and acculturation challenges and successes of pregnant immigrant Latinas in Watsonville, CA.

Recommendation 2: Stronger Social Support Initiatives for Pregnant Immigrant Latinas

This study showed that pregnant immigrant Latinas lacked their traditional social support networks, for example, *comadres* or the maternal "triad" as previously discussed. For this reason, the establishment of a Latina support group that incorporates Latino cultural values and acculturation in Watsonville is recommended. This suggestion of women's social groups would fulfil the social needs of this group during the experience of pregnancy in Watsonville. As previously discussed, social support during pregnancy has been demonstrated to have a positive effect on maternal outcomes. For this reason, the cultural social network (*comadrazgo*) among Latinas could buffer stress in a new host

culture, particularly during pregnancy. In addition, the provision of holistic support in accessing social services, mental health services, shelter, clothing, and educational and vocational assistance is required to provide social support and reduce stress before, during, and after pregnancy in a new host culture.

These results can prompt public health professionals, health care professionals, and faith/community-based organizations in Watsonville to become aware of and learn about immigrant Latinas' past and current social support systems and the quality of their relationships during and after pregnancy. Local community-based or faith-based organizations can integrate this practice into their existing program structure. For example*, Salud Para La Gente*, *Community Bridges,* and *La Manzana Community Resource* are currently serving the Latino community in Watsonville, so they may be able to incorporate this practice into their existing structure.

Overall, organizations in Watsonville may be able to provide leadership to promote social improvements by buffering the social, cultural, and acculturation stress experienced by pregnant immigrant Latinas. Moreover, organizations should be encouraged to continue to safeguard the health of all human beings, regardless of their legal status in the United States.

Recommendation 3: Use Findings for Developing a Community Education Strategy

The development of a community education strategy could inform and educate community partners and gatekeepers on the various factors that influence and impact on the health and wellbeing of pregnant immigrant Latinas in Watsonville. For example, the findings suggest that pregnant immigrant Latinas need a tangible and concrete social support network **(**i.e., a *comadre*-like program) in the United States. With the

establishment of a community education strategy, community partners and gatekeepers could advocate for resources and services for this group. Moreover, such a strategy provides the opportunity to initiate conversations on the factors that influence pregnant immigrant Latinas in the new host culture. Community partners include all of those community-based and faith-based organizations, businesses, and local media groups that engage with the Latino community in Watsonville.

Adopting a community education as a strategy can lead to the improved health of individuals by mobilizing services and resources that would not otherwise be available using a more traditional "top-down" approach. Consequently, individuals would gain knowledge on needed resources and services such as a *comadre*-like program within the new host culture. The community education could enhance knowledge among individuals in Watsonville on the needed resources and services for pregnant immigrant Latinas that can lead to improvements at a systematic level, as described by the EMT, with the aim of fostering social change. Collectively, these efforts would ultimately improve maternal and infant health outcomes among immigrant Latinas in Watsonville.

Recommendation 4: Promote Cultural Family-Centered Care

The findings from this study have highlighted the fact that Latino cultural values are important and influential among pregnant immigrant on their health behaviors, family, interpersonal interactions and gender roles. With this in mind, it is important to acknowledge that Latino cultural values play an important role in the lives of Latinas, regardless of where they live (Mexico or United States). For this reason, it is recommended that front line staff such as public health professionals, health educators, *promotoras* (community health workers of a target population sharing many of the same

social, cultural, and economic characteristics), social services workers, midwives, *doulas,* and OB/GYN staff and physicians integrate Latino cultural values into their practice to promote relevant health behaviors among pregnant immigrant Latinas. For example, acknowledging and understanding how Latino cultural values influence immigrant Latinas when delivering health information and services can result in more meaningful and effective initiatives.

Integrating these values into practices can convey to pregnant immigrant Latinas that professional staff honor and acknowledge their cultural backgrounds, engaging authentically with their values and holistically putting them into practice. In addition, the findings of the study may help public health and healthcare providers to understand how the new host culture influences pregnant immigrant Latinas regarding housing, transportation, nutrition and diet, physical activity, cultural and traditional home remedies, social and civil conduct expectations, social support networks, and weight gain. A greater understanding of these issues would help providers to deliver reliable resources and services to pregnant immigrant Latinas.

Conclusion

The findings of this study have revealed how the participants were influenced by their traditional (Mexican) and host (American) cultures and the acculturation process that they underwent during their pregnancies in the United States. In addition, the study's findings have shown that acculturation should be measured based on personal and contextual factors, and not according to the duration of time spent in the United States. Moreover, the study has revealed non-medical contributing factors (jobs, economy, walkability, and accessibility to healthful foods) relating to social support networks and

the economy that influence the types of health behaviors that are adopted or rejected. Additionally, participants in this study genuinely wished to share their ideas on improving their health and wellness during pregnancy.

This study has extended knowledge on how different ecological levels affect individuals' health behaviors during pregnancy. However, as the findings of the study have revealed, the factors in the macrosystem and exosystem exert more influence as they interact with individuals' cultural beliefs, regardless of their physical locations. Public health and social service professionals, as well as OB/GYN and other medical providers and community partners, could use this information to develop culturally congruent practices that could help to improve health outcomes by creating social changes associated with the health and wellness of immigrant Latinas and within their communities. The study has highlighted the need to develop support systems for pregnant immigrant Latinas in Watsonville. The suggested social support network program (i.e., *comadrazgo*-like program) could help provide a protective effect and buffer to stress experienced by pregnant Latinas in a new host culture; ultimately improving maternal and birth health outcomes of immigrant Latinas in Watsonville.

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Appendix A: Interview Guide–Spanish

Introducción

Llevare esta entrevista en español a menos que prefiera que la haga en inglés. Primero que nada, quiero darle las gracias por tomarse el tiempo para reunirse conmigo. Mi nombre es Martha Eugenia Domínguez y soy estudiante de doctorado en Salud Publica en la Universidad de Walden.

Yo nací y crecí aquí en Watsonville, pero me mude para seguir mis estudios Universitarios. Durante los últimos años, me he dedicado a mejorar la salud y el bienestar de la comunidad Latina.

Hoy, me gustaría hablar con usted acerca de las similitudes y diferencias de estar embarazada en el Estado Unidos y México. No hay respuestas correctas o incorrectas. Todo lo que me cuente es importante. Estoy interesada en sus experiencias únicas.

Formato de la Entrevista

La entrevista durara aproximadamente unos 45–75 minutos. Aunque voy a tomar algunas notas durante la sesión, no es posible captar todo, es por eso que la sesión será grabada para no perder contenido. Debido a que la sesión será grabada, por favor háblale fuerte y claro para que sus comentarios sean capturados.

Todas sus respuestas e identidad se mantendrán confidenciales. Esto significa que sus respuestas sólo serán compartidas con mi equipo de estudio. El contenido en el reporte no identificara su identidad. Recuerde, usted no tiene que hablar de ninguna cosa que no quiera, y usted puede terminar la entrevista en cualquier momento. ¿Tiene alguna pregunta antes de empezar?

Inicio de la Entrevista

Estudio Criterio: ¿Cuántos embarazos has tenido en México y Estados Unidos?

Preguntas de Estudio:

Cultura/La Aculturación

1. ¿Cuánto tiempo has vivido en los Estados Unidos/Watsonville?
2. ¿Qué idioma prefieres hablar?

   ¿En qué idiomas son los programas de televisión, estaciones de radio o los periódicos que sueles ver, escuchar o leer?
3. Háblame sobre el tipo de atención médica que has seguido para tu embarazo aquí en comparación a tu embarazo en México.

   ¿Consultaste con: curanderos, parteras, o sobadoras?
4. Háblame de las costumbres que sigues para tu embarazo, dieta y ejercicio en EE.UU.

   ¿Hay remedios caseros que sigues?

   ¿Cómo estas costumbres son distintitas ha cuando estabas embarazada en México?
5. Dime qué tipo de apoyo social tienes aquí en los EE.UU.

   ¿De quién (ej., esposo/compañero, madre, familia, amigos, etc.) dependes más para tu embarazo, la dieta y el ejercicio?

   Dime qué tipo de apoyo necesitas.

   ¿El apoyo social aquí es similar o diferente de cuando estabas embarazada en México?
6. ¿Tiene más o menos dinero para gastar en artículos aquí en los EE.UU.?

¿Quién toma las decisiones sobre el dinero en tu familia?

¿Qué tipo de decisiones tomas sobre compras:

¿En comida?

¿Das recomendaciones sobre compras de alimentos?

¿En el ejercicio / actividad física?

¿Alguna vez no has tenido suficiente dinero para comprar la comida que quieres/ocupas aquí en los EE.UU.? ¿Alguna vez te hizo falta dinero para comprar la comida que querías/necesitabas en México?

7. ¿Alguna vez no has tenido suficiente dinero para poder hacer ejercicio como quieres/necesitas en los EE.UU.? ¿Alguna vez te hizo falta dinero para poder hacer ejercicio cómo querías/necesitabas en México?
8. ¿Alguna vez no has tenido suficiente dinero para comprar las cosas que quieres/necesitas para su embarazo en los EE.UU.? ¿Alguna vez te hizo falta dinero para comprar cosas que querías/necesitabas para su embarazo en México?
9. Describe tu experiencia de estar embarazada en los EE.UU. en comparación con tu embarazo en México.

Dieta y Nutrición

1. Describa su típica dieta diaria ahora que está embarazada en el EE.UU.
2. Describa su dieta típica cuando estaba embarazada en México.
3. ¿Con qué frecuencia se consumen alimentos preparados/ para llevar / comidas rápidas?

¿Cómo esto se compara a cuando vivía en México?

4. ¿Cuáles son las diferencias principales / similitudes en su dieta ahora que cuando vivía en México?

Actividad Física

1. Describa la actividad física que realiza a diario ahora.
2. Describa la actividad física que hiciste a diario cuando estaba embarazada en México.
3. ¿Cuáles son las diferencias principales/similitudes en su actividad física de aquí y de México?

[Si el participante indico que esta empleado, entonces haz la siguiente pregunta]

4. Describa sus actividades laborales diarias.

    ¿Se sienta/para/camina por mucho tiempo?

Aumento de peso

1. ¿Tiene algún problema de salud relacionados con el aumento de peso, como diabetes gestacional o presión arterial alta? Si es así, ¿por qué?
2. ¿Está usted más preocupado, menos preocupado o preocupada por igual en lo que respecta a su aumento de peso con el embarazo actual en los EE.UU. en comparación con su último embarazo en México?

Cierre

¿Hay algo más que le gustaría añadir?

Voy a repasar nuestra conversación y quizá necesite que revise usted el contenido para asegurar precisión. ¿Podría enviarle a usted a través del correo electrónico o por correo el contenido? O, ¿También me podría reunir con usted? Entiendo si usted no está disponible.

Gracias por su tiempo.

Appendix B: Interview Guide–English

Introduction

I plan to conduct this interview in English unless you would rather that I interview you in Spanish. I want to thank you for taking the time to meet with me today. My name is Martha Eugenia Dominguez and I am a Walden University Doctoral student in Public Health, specializing in community health.

I was born and raised here in Watsonville, but moved away to pursue higher education. For the last several years, I have dedicated myself to improving the health and well-being of the Latino community.

Today, I would like to talk to you about the similarities and differences of being pregnant in the United States and Mexico. There are no right and no wrong answers. Everything you say is important. I am interested in your unique pregnancy experiences.

Interview Format

The interview will last about 45–75 minutes. I will be audio recording the session, because I do not want to miss any of your comments. Although I will be taking some notes during the session, I cannot possibly write fast enough to get it all down. Because the session is being recorded, please speak up so that your comments are captured.

All responses will be kept confidential. This means that your responses will only be shared with my research team, and no information that is included in the report will identify you as the respondent. Remember, you don't have to talk about anything that makes you uncomfortable, and you may end the interview at any time. Do you have any questions before we start?

Start of the Interview

Study Criteria: How many pregnancies have you had in Mexico and the United States?

Study Questions:

Culture/Acculturation

1. How long have you lived in the United States/Watsonville?
2. What language do you prefer to speak?

   What languages are the TV shows, radio stations or newspapers that you usually watch, listen or read in?

3. Tell me about the type of healthcare you have experienced for your pregnancy here compared with your pregnancy in Mexico.

   Probe: on healers, midwives, or *sobadoras*

4. Tell me about the cultural traditions/recommendations you follow for your pregnancy, diet, and exercise in the United States.

   Are there any home remedies that you use now?

   How do these cultural traditions/recommendations differ from those during your pregnancy in Mexico?

5. Tell me about your social support here in the United States.

   Who (i.e., partner/husband, mothers, friends, etc.) do you rely on for support with your pregnancy, diet, and exercise?

Tell me about the types of support you need.

Is the social support similar or different from the social support you had when you were pregnant in Mexico?

6. Do you have more or less money to spend on items here in the United States?

Who makes the money decisions in your family?

What purchasing decisions do you make?

On food?

Do you provide recommendations on food purchases?

On exercise/physical activity?

Do you ever not have enough money to get the food you want/need here in the United States? Did you ever lack money to get the food you wanted/needed in Mexico?

Do you ever not have enough money to be able to exercise how you want/need in the United States? Did you ever lack money to exercise how you wanted/needed in Mexico?

Do you ever not have enough money to get the things you want/need for your pregnancy in the United States? Did you ever lack money to get the things you wanted/needed for your pregnancy in Mexico?

7. Describe your experience of being pregnant in the United States compared with when you lived in Mexico.

Diet and Nutrition

1. Describe your typical daily diet now that you are pregnant in the United States.
2. Describe your typical diet when you were pregnant in Mexico.
3. How often do you consume prepared foods/take out foods/fast foods?

   How does this compare to when you lived in Mexico?
4. What are the major differences/similarities in your diet now compared with when you lived in Mexico?

Physical Activity

1. Describe the physical activity you do on a daily basis now.
2. Describe the physical activity you did on a daily basis when you were pregnant in Mexico.
3. What are the major differences/similarities in your physical activity here and in Mexico?

[If participant has indicated that she is current employed, then ask the following question.]

4. Describe your daily job activities.

   Do you sit/stand/walk for long periods of time?

Weight gain

1. Do you have any health concerns related to weight gain such as gestational diabetes or high blood pressure? If so, why?
2. Are you more concerned, less concerned, or equally concerned regarding your weight gain with your current pregnancy in the United States compared with your last pregnancy in Mexico?

Closing

1. Is there anything more you would like to add?

I will be going over our conversation and may need to ask you to review some of it for accuracy. I would like to ask you to review for accuracy. Can I send it to you via email or by mail? Or, can I also meet you? I understand if you are not available.

Thank you for your time.

Appendix C: Pre-Screen Tool

Study Criteria:

- Are you over 18 years old?
    - *Yes or No*
- Were you born in Mexico?
    - *Yes or No*
- Have you had a pregnancy in Mexico?
    - *Yes or No*
- Are you pregnant now?
    - *Yes or No*
- Have you immigrated to the United States within the last 5 years?
    - *Yes or No*
- Do you self-report as a Latina of Mexican origin?
    - *Yes or No*

[If the individual meets the above criteria, then pre-screen and obtain the information below for follow-up and contact]

****

Pre-screening Study Questions

- For your current pregnancy, has anyone ever told you that you may have any of the following:
    - Substance use or psychiatric illness? *Yes or No*

  - Diet/nutrition or exercise restrictions? *Yes or No*
  - Medical conditions? *Yes or No*
- Do you plan to remain in the Watsonville area during the study period (the next 6–9 months)?
  - *Yes or No*
- Are you able to read and write English?
  - *Yes or No*
- Are you able to read and write Spanish?
  - *Yes or No*

****

Name:

Code number:

Age:

Email address:

Address:

Length of pregnancy:

Birth place:

Highest school grade or year completed:

Telephone number:

Appendix D: Recruitment Announcement at Church Venues

English

Good [morning/afternoon]. My name is Martha Eugenia Dominguez and I am a Walden University doctoral student in Public Health, specializing in community health. I was born and raised here in Watsonville, but moved away to pursue higher education. For the last several years, I have dedicated myself to improving the health and well-being of the Latino community.

Today, I am here to invite immigrant pregnant Latina women to be part of my research study which is required for my doctoral degree.

My research study is about the similarities and differences of being pregnant in the United States and Mexico among pregnant immigrant Latinas in Watsonville, California. To participate, you must be pregnant and over 18 years old; born in Mexico; have had a pregnancy in Mexico, be pregnant now, and have lived in the United States for the past 5 years. The study involves a one-time interview of 45–75 minutes long. Those who qualify and complete the interview will receive a $20 gift card for their participation and time.

If you are interested or know of anyone who may be interested, I will be outside to answer any questions you may have. You can also contact me via phone, text, or email at (831) 498-9414 and martha.dominguez@waldenu.edu.

Spanish

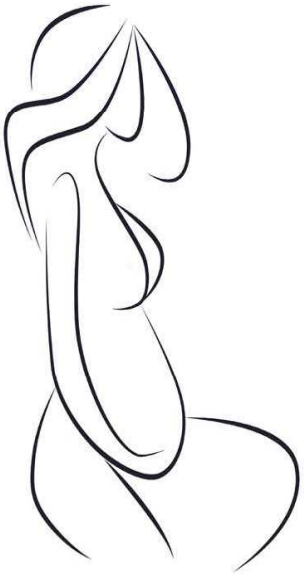
Buenas [días/tardes]. Mi nombre es Martha Eugenia Domínguez. Soy una estudiante de doctorado en la Universidad de Walden en Salud Pública, especializada en la salud de la comunidad. Yo nací y me crie aquí en Watsonville, pero me mude para seguir mis estudios universitarios. En los últimos años, me he dedicado a mejorar la salud y el bienestar de la comunidad latina. Hoy, estoy aquí para invitar a las mujeres latinas inmigrantes que estén embarazadas a ser parte de mi estudio como parte de mi trabajo para obtener mi doctorado.

En este estudio, voy a estudia sobre las similitudes y diferencias de estar embarazada en los Estados Unidos y México entre las embarazadas inmigrantes Latinas en Watsonville, California. Para participar, usted debe estar embarazada y tener más de 18 años de edad, ser nacida en México, haber tenido un embarazo en México y que ha vivido en Estados Unidos durante los últimos 5 años. El estudio requiere de una entrevista de 45 a 75 minutes. Las personas que califiquen y completen la entrevista recibirán una tarjeta de regalo de $ 20 por su participación y tiempo.

Si usted está interesada o conoce a alguien que pueda estar interesada, estaré afuera para responder a cualquier pregunta que usted tenga. También pueden contactarme a través de teléfono, texto, o correo electrónico a (831) 498-9414 o martha.dominguez@waldenu.edu.

Appendix E: Recruitment Flyer–English

Pregnant Immigrant Latinas Needed for Research Study



You are invited to participate in a research study evaluating the similarities and differences of being pregnant in the United States and Mexico among pregnant immigrant Latinas in Watsonville, California.

The study involves a one-time 45-75 minutes interview. Latinas who qualify and complete a full interview will receive a $20 gift card for their participation and time.

To participate:

- Over 18 years old
- Must be pregnant
- Born in Mexico
- Have had a pregnancy in Mexico
- Have lived in Watsonville/United States for the past 5 years

To learn more, contact the principle investigator, doctorate student of the study. Phone, text, or email, **Martha Dominguez** at **831-498-9414** or martha.dominguez@waldenu.edu

This research is conducted under the direction of Dr. Jacquie Fraser, Walden University, College of Health Sciences, and has been reviewed and approved by the Walden University Institutional Review Board.

Martha Dominguez
831-498-9414
martha.dominguez@waldenu.edu
Cultural Research Study

Appendix F: Recruitment Flyer–Spanish

Se busca Latinas inmigrantes que estén embarazadas para un estudio Universitario

Estas invitada a participar en un estudio para evaluar las similitudes y diferencias de estar embarazada en los Estados Unidos y México entre las embarazadas inmigrantes Latinas en Watsonville, California.

El estudio requiere una entrevista de 45-75 minutos. Las Latinas que califiquen y completen la entrevista recibirán una tarjeta de regalo de $20 por su participación y tiempo.

Para participar:

- Tener más de 18 años de edad
- Estar embarazada
- Nacida en México
- Haber tenido un embarazo en México
- Vivido en Watsonville/Estados Unidos por los últimos 5 años

Para obtener más información, contacte a la estudiante de doctorado del estudio. Teléfono, texto, o correo electrónico, **Martha Dominguez** al **831-498-9414** o **martha.dominguez@waldenu.edu**

Este estudio se lleva a cabo bajo la dirección de la Dra. Jacquie Fraser, de la Universidad de Walden, Facultad de Ciencias de la Salud, y ha sido revisado y aprobado por la Junta de Revisión Institucional de la Universidad de Walden.

Martha Dominguez
831-498-9414
martha.dominguez@waldenu.edu
Estudio Cultural

Martha Dominguez
831-498-9414
martha.dominguez@waldenu.edu
Estudio Cultural

Appendix G: Contact Email to Community Partners–English

English

Dear [*insert community partner's name*]:

Good morning/afternoon. My name is Martha Eugenia Dominguez, and I am a Walden University Doctoral student in Public Health, specializing in community health. I was born and raised here in Watsonville, but moved away to pursue higher education. For the last several years, I have dedicated myself to improving the health and well-being of the Latino community.

I would like to post and distribute flyers in **[***insert community partner location***]** to promote and recruit individuals to participate in my research project as part of my required work for my doctoral degree.

My research study is about the similarities and difference of being pregnant in the United States and Mexico among pregnant immigrant Latinas in Watsonville, California. This study does not pose any risk to the safety or wellbeing of the women and their fetuses.

The study involves a one-time interview about one hour long. Those who qualify and complete the interview will receive a $20 gift card for their participation and time.

At this time, I am seeking your cooperation to give me permission to post and distribute flyers. If you agree, I will need to ask for a formal letter of cooperation for Walden University. Attached is a proposed letter; you can make any edits.

I am available via telephone and email if you would like to discuss further at (831) 498-9414 or martha.dominguez@waldenu.edu. Your attention is greatly appreciated.

Martha E. Dominguez

Appendix H: Contact Email to Community Partners–Spanish

Spanish

Querido [*poner nombre del socio comunitario*]:

Buenas tardes. Mi nombre es Martha Eugenia Domínguez. Soy una estudiante de doctorado en la Universidad de Walden en Salud Pública, especializada en la salud de la comunidad. Yo nací y me crie aquí en Watsonville, pero me mude para seguir mis estudios universitarios. En los últimos años, me he dedicado a mejorar la salud y el bienestar de la comunidad latina.

Me gustaría distribuir volantes en **[***poner el nombre del lugar***]** para promover y reclutar a las personas a participar en mi proyecto de estudio como parte de mi trabajo que se requiere para mi doctorado.

En este estudio, voy a estudiar sobre las similitudes y diferencias de estar embarazada en los Estados Unidos y México entre las embarazadas inmigrantes Latinas en Watsonville, California. Al participar en este estudio no plantearía ningún riesgo para seguridad o bienestar de la madre o bebe.

El estudio requiere de una entrevista de una hora. Las Latinas que cumplan los requisitos y completen la entrevista, recibirán una tarjeta de regalo de $20 por su participación y su tiempo.

En este momento, estoy buscando su cooperación para distribuir los volantes. Si estás de acuerdo, voy a pedirte una carta formal de cooperación para mi escuela, la Universidad de Walden. Aquí te incluyo la carta de propuesta, puedes hacer cualquier cambio.

Estoy disponible a través de teléfono, texto, o correo electrónico a (831) 498-9414 o martha.dominguez@waldenu.edu. Su atención es agradecida.

Martha E. Domíngue

Appendix I: Community Resources

Watsonville Community/Comunidad
Resources & Services/Recursos y Servicios

Food Assistance Asistencia Alimentación	Nutrition Nutrición	Physical Activity Actividad física	Mental Health Salud Mental	Health Services Servicios de Salud	Career Center Centro de Carreras	Affordable Health Insurance Seguro de Salud a Bajo Precio	MediCal	Services Servicios
CalFresh Watsonville 8 W. Beach Street Watsonville CA 95076 (831) 763-8500 1 (888) 421-8080 1 (877) 847-3663 www.calfresh.ca.gov http://www.mybenefitscalwin.org	Women's, Infant and Children (WIC) Call 1-888-WIC-WORKS (1-888-942-9675) The Community Bridges WIC agency 18 W. Lake Ave. Suite A Watsonville, CA (831) 722-7121	City of Watsonville Parks and Community Services Department 231 Union St. Watsonville, CA 95076 831-768-3240 Hours/Horas: Monday - Thursday 9am to 5pm Lunes a Jueves 9am a 5pm	Santa Cruz County Mental Health – Access 1430 Freedom Blvd, #101, Watsonville, CA 95076 1 (831) 763-8200 1 (800) 952-2335 (800)-952-2335 1400 Emeline Ave. Santa Cruz, CA 95060	Salud Para La Gente, Inc. 204 E BEACH ST Watsonville CA, 95076 http://WWW.SPLG.ORG (831) 728-0222	CalWORKs: Welfare-to-Work Program, WIA Services 18 W. Beach Street, Watsonville, CA 95076 P.O. Box 1320, Santa Cruz, CA 95061 1 (831) 763-8700 1 (831) 763-8500	Covered CA: 800-300-1506 www.coveredca.com Presumptive Eligibility: (800-824-0088 California Mid-Income (AIM): 1-800-433-2611	Watsonville Center 18 W. Beach Street, Watsonville, CA 95076 (831) 763-8500 www.mybenefitscalwin.org Hours: 8am to 5pm Benefits Call Center Toll 1-888-421-8080	General information/Información General: Medi-Cal, Food Stamps, CalWORKs, General Assistance, Welfare-to-Work, Child Care, Foster Care Eligibility Phone: 1-888-421-8080 Website: http://www.santacruzhumanservices.org
Second Harvest Food Bank, Santa Cruz County 800 Ohlone Parkway Watsonville ca 95076 1(831) 662-0991 Contact/Llama Joel Campos 831-722-7110 ext. 222	City of Watsonville Parks and Community Services Department 231 Union St. Watsonville, CA 95076 831-768-3240 Hours/Horas: Monday - Thursday 9am to 5pm Lunes a Jueves 9am a 5pm	Watsonville Family YMCA 27 Sudden Street Watsonville, CA (831) 728-9622 www.centralcoastymca.org	PLANNED PARENTHOOD MAR MONTE 398 South Green Valley Rd, Watsonville, CA 95076 (831) 724-7525	Clinica del Valle del Pajaro 45 Nielson Street, Watsonville CA 95076 (831) 761-1588		Covered CA: 800-300-0213 www.coveredca.com/espanol Presumptive Eligibility: (800-824-0088 California Mid-Income (AIM): 1-800-433-2611		Watsonville Application Center Emergency applications, walk-in or drop off applications, drop boxes for verifications and forms, bilingual services. Aplicaciones de emergencia, verificaciones y formas, servicios bilingües Location: 18 W. Beach Street, Watsonville, CA 95076 Mailing: P.O. Box 1320, Santa Cruz, CA 95061 Phone: (831) 763-8500
Women's, Infant and Children (WIC) Call 1-888-WIC-WORKS (1-888-942-9675) The Community Bridges WIC agency 18 W. Lake Ave. Suite A Watsonville, CA (831) 722-7121	Corinne Hyland, MPH Senior Health Educator Santa Cruz County Helath Services Agency Public Health Department 1070 Emeline Ave, Bldg G Santa Cruz, CA 95060 corinne.hyland@health.co.santa-cruz.ca.us 831-454-7558	Corinne Hyland, MPH Senior Health Educator Santa Cruz County Helath Services Agency Public Health Department 1070 Emeline Ave, Bldg G Santa Cruz, CA 95060 corinne.hyland@health.co.santa-cruz.ca.us 831-454-7558	Beacon Health Strategies 1-855-765-9700 Call-center /Centro de Llamadas	PLANNED PARENTHOOD MAR MONTE 398 South Green Valley Rd, Watsonville, CA 95076 (831) 724-7525				Apply for CalFresh, CalWORKs, & Medi-Cal, online 24/7, www.MyBenefitsCalWIN.org Call 1 (888) 421-8080 18 West Beach Street in Watsonville
	Jennifer Larkin Health Program Spercialist Santa Cruz County Helath Services Agency Public Health Department 1070 Emeline Ave, Bldg G Santa Cruz, CA 95060 jennifer.Larkin@co.santa-cruz.ca.us (831) 454-4287	Jennifer Larkin Health Program Spercialist Santa Cruz County Helath Services Agency Public Health Department 1070 Emeline Ave, Bldg G Santa Cruz, CA 95060 jennifer.Larkin@co.santa-cruz.ca.us (831) 454-4287	Family Services Agency of the Central Coast 11 Alexander Street, Suite D Watsonville, CA 95076 phone: 831-728-9970 x200 fax: 831-728-9971	Green Valley Clinic 280 Green Valley Road Bld 1, Freedom CA 95019 (831) 722-2666				