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Social Support of Mexican Immigrant Women with Gestational Diabetes Mellitus: A Constructivist Grounded Theory Study

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SOCIAL SUPPORT OF MEXICAN IMMIGRANT WOMEN WITH GESTATIONAL DIABETES MELLITUS: A CONSTRUCTIVIST GROUNDED THEORY STUDY

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ABSTRACT

The purpose of this study was to explore the perception of social support among Mexican immigrant women with gestational diabetes mellitus (GDM) within the context of their culture and discern the process through which social support can influence their adherence to the GDM management protocols. The incidence of GDM is highest in low-income, ethnic minority communities such as the Mexican immigrant community. Adhering to the GDM management protocols may prove challenging for some women, especially if social support is lacking. If uncontrolled, GDM can result in adverse maternal-fetal outcomes. Among Mexican immigrant women, the incidence of poor glycemic control and adverse maternal-fetal outcomes related to GDM is high. The current GDM management protocols do not consider the contextual forces that could render GDM management goals unattainable for Mexican immigrant women. Recently immigrated Mexican women are predisposed to a lack of social support. This lack of social support may negatively impact their adherence to the stringent GDM management protocols.

A constructivist grounded theory study design was used. In-depth individual interviews were conducted with 22 recently immigrated Mexican women with GDM. The core concept of Achieving Equipoise emerged from the grounded theory analysis, which elucidates the social support processes of Mexican immigrant women with GDM and the influence of social support on their adherence to the GDM management protocols. Three main processes of Achieving Equipoise (i.e., seeking family support, modulating support, and navigating cultural norms and values) also emerged from the grounded theory analysis, which demonstrated that the women could not achieve equipoise in social support without going through these three iterative, non-linear processes.

The findings of this study provide a theoretical foundation to assessment processes and interventions that guide the development of disease management strategies for Mexican immigrant women with GDM and facilitate the implementation of and adherence to disease management. Importantly, this study lays a foundation for future research on the nuances and complexities of the process of social support among collectivistic cultures.

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DEDICATION

This dissertation is dedicated to my mother (posthumously) and my father who instilled in me that education is the key to freedom and nurtured my quest for knowledge from childhood. My deepest gratitude especially goes to my father for believing in me, giving me the confidence to chase my dreams, and encouraging me to spread my wings and soar. Thank you, Daddy, for the foundation you laid and the values you taught. I am who I am because of you.

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CHAPTER 1

INTRODUCTION

The purpose of this chapter is to introduce the study topic. This chapter features a discussion of the background and significance of the study, statement of the problem, the purpose of the study, and definitions of the terminologies used in the study.

In the United States, the prevalence of gestational diabetes mellitus (GDM) is on the rise (Zhou et al., 2018), with the highest incidence documented in ethnic minority communities, such as the Mexican community (Barakat et al., 2014; Berry et al., 2015; Hedderson et al., 2010; Kim et al., 2013). Studies have revealed a higher prevalence of GDM in Mexican immigrant women compared to their White counterparts (DeSisto et al., 2014; Hedderson et al., 2010), and a high incidence of adverse maternal–fetal outcomes related to GDM (Berggren et al., 2012b; Mocarski & Savitz, 2012; Yuen & Wong, 2015). Notably, some researchers have concluded that complications related to diabetes were largely due to nonadherence to treatment (Affusim & Francis, 2018; García-Pérez, 2013; Kassahun, 2016). In contrast, women who strictly adhered to the GDM management protocols achieved glycemic control and were less likely to have adverse outcomes related to GDM (Cardwell, 2013; Harrison et al., 2016; Shao et al., 2017).

Social support is one factor that may mitigate nonadherence to treatment. In some studies, participants who had social support demonstrated better adherence to treatment than those who did not (Affusim & Francis, 2018; Gu et al., 2017). However, other scholars have indicated that Mexican immigrant women may lack the social support needed to promote adherence to stringent GDM management protocols to achieve glycemic control (Furman et al., 2009; Harley & Eskanazi, 2006, Martinez-Schallmoser et al., 2005). Thus, this lack of social support may could contribute to the high incidence of adverse maternal–fetal outcomes related to

GDM in this population. Unfortunately, little is known about the processes that facilitate social support of Mexican immigrant women with GDM and how social support can influence their adherence to the GDM management protocols. Therefore, an exploration of the perception of social support among Mexican women with GDM within the context of their culture is necessary to generate theoretical explication of this phenomenon.

Background and Significance

GDM is defined as impaired glucose tolerance with onset or first recognition in pregnancy (American Diabetes Association [ADA], 2019; Rani & Begum, 2016), which can result in adverse maternal–fetal outcomes, if blood glucose levels are not adequately controlled, that is achieving euglycemia (Bardenheier et al., 2015; Negrato et al., 2012). GDM affects approximately 9.2%–25.5% of all pregnancies in the United States (DeSisto et al., 2014; Sacks et al, 2012), and the prevalence trending upward with a 3.7% increase documented per year between 2011 and 2019 (Shah et al., 2021). The national economic cost of GDM was estimated at $636 million in 2007, comprising $596 million for maternal costs and $40 million for neonatal costs (Chen et al., 2009). These statistics underline how the maintenance of normal blood glucose is critical for positive maternal–fetal outcomes (American College of Obstetricians and Gynecologists [ACOG], 2018; ADA, 2019) and health-care cost savings.

GDM in Mexican Women

In the Hispanic community, GDM arises as a complication in approximately 6.6%–11.5% of all pregnancies compared to 4.1%–6.7% in Whites (Casagrande et al., 2018; DeSisto et al., 2014; Hedderson et al., 2010; Shah et al., 2021). Some studies found that Hispanic women (largely of Mexican origin) with GDM experience a high incidence of complications related to GDM, such as neonatal hypoglycemia, neonatal hyperglycemia, macrosomia, and shoulder

dystocia compared to White women (Berggren et al., 2012a, 2012b). Furthermore, a rise in the incidence of GDM could conceivably increase the prevalence of type 2 diabetes, considering that a significant percentage of women with a history of GDM and their offspring are at higher risk of developing type 2 diabetes (ADA, 2019; Bardenheier, 2015; Mitanchez et al., 2014; Noctor & Dunne, 2015; Shah et al., 2021). Population studies have also indicated that women in the Mexican community, especially those born outside the United States are at higher risk of developing GDM (Hedderson et al., 2010; Kim et al., 2013).

Glycemic Control

Achieving glycemic control requires women with GDM to adhere to stringent GDM management protocols that involve significant lifestyle changes. According to the ADA (2019) and Negrato and Zajdenverg (2012), these patients must follow a strict carbohydrate-restricted diet with a low glycemic index, increase their physical activities, and control their weight. In addition, women with GDM must perform daily blood glucose self-monitoring (fasting and 1–2 hours after each meal) and keep an accurate journal of their blood glucose levels and dietary intake. Furthermore, they must attend diabetes education/counseling programs and make additional clinic visits for close monitoring of their baby (ACOG, 2018; ADA, 2019). The high demands of the GDM management protocols can induce stress in pregnant women (Craig et al., 2020; Leung Hui et al., 2014) and impede adherence. In fact, multiple studies have shown that women who have GDM experience higher levels of stress than healthy pregnant women or women with nonpregnancy-related diabetes (Craig et al., 2020; Egan et al., 2017; Hayase et al., 2014).

Glycemic Control in Mexican Women

Along with the stress associated with pregnancy and the added strain of having GDM, Mexican immigrant women, especially if they have recently immigrated, also contend with isolation and loneliness due to the loss of support systems during immigration, language barriers, and differences in cultural characteristics, norms, and values (Crocker, 2015; Dahlan et al., 2019; Harley & Eskenazi, 2006; Martinez-Schallmoser et al., 2005). These stressors may predispose the women to a lack of social support (Furman et al., 2009; Harley & Eskenazi, 2006). For example, research has demonstrated how a language barrier can promote isolation and prevent people from seeking social support (Harley & Eskenazi, 2006; Martinez-Schallmoser et al., 2005). In terms of cultural characteristics, some Mexican cultural norms and values, such as *familismo*, *machismo*, and *marianismo,* may exert additional pressure and stress on women, deterring them from seeking or accepting social support (Caballero, 2011; Hu et al., 2013; Mansyur et al., 2015) because they are compelled to prioritize others' needs over their own and may refrain from sharing their personal needs and struggles with others (Nuñez et al., 2016).

According to Saldana & Felix (2011), food restrictions as a part of the management of GDM can further stress Mexican immigrant women because food is symbolic in Mexican culture and family, providing comfort and building a sense of togetherness, nostalgia, and contentment. Some of the Mexican staple foods mentioned by the authors include maize, tortillas, sweet bread, rice, roots, such as jicama, beans, chili, mole (which includes chocolate in the ingredients), and animal protein. Due to the high carbohydrate content in many of these traditional Mexican foods, women with GDM should avoid them (ADA, 2019). Hence, adherence to the food restrictions prescribed by the GDM management protocol may prove challenging for Mexican immigrant women who are responsible for the foods served in their household and are conditioned to

prioritize the needs of the family over theirs (Caballero, 2011; Martinez et al., 2017). Consequently, Mexican immigrant women may lack support from their families for the dietary modifications needed to achieve euglycemia (Hu et al., 2013).

Mexican women with GDM have indicated a lack of social support as a common barrier to maintaining GDM management activities (Chasan-Taber, 2012; Collier et al., 2011; Marquez et al., 2009). This finding is particularly vital because social support has been shown to improve health and buffer against the pathogenic effects of stress (Baqutayan, 2011; Cohen & Pressman 2004; Dai et al., 2016; Gellert et al., 2018; Kornblith et al., 2001; Rao et al., 2012; Sippel et al., 2015). Researchers have also asserted that social support improves quality of life and mitigates stress in pregnant women (Iranzad et al., 2014; Iwanowicz-Palus et al., 2019). Notably, several studies have labeled social support an impetus for adherence to treatment (Affusim & Francis, 2018; García-Pérez, 2013; Kassahun, 2016). Hence, a lack of social support arguably contributes to nonadherence to GDM management protocols, with resultant poor glycemic control, explaining the high prevalence of GDM and incidence of related adverse maternal–fetal outcomes in Mexican immigrant women.

The Hispanic population is the largest minority group in the United States, and has the highest birth rate, constituting 17.8% of the U.S. population and projected to reach 30% by the year 2050 (Berggren et al., 2012b; Chasan-Taber et al., 2014; US Census Bureau, 2017). Importantly, Mexicans are the largest Hispanic subgroup, comprising 63.2% of the Hispanic population (US Census Bureau, 2017). Mexican women represent 52% of the Mexican population and 25% of the entire female population in the United States (Paz & Massey, 2016).

Unfortunately, literature is scarce concerning the social support of Mexican women with GDM and their adherence to GDM management protocols. Specifically, no theoretical

explication is available in the existing literature concerning the social processes that facilitate the social support of Mexican women with GDM within the context of their culture or how those social processes influence their adherence to GDM management protocols. This research, using the constructivist grounded theory (GT) approach sought to generate a deep theoretical understanding of the perception of social support among Mexican women with GDM, the process through which Mexican women with GDM seek and receive social support, and how social support can influence their adherence to the GDM management protocols. Consequently, with theory development and future testing, culturally congruent interventions that include social support can be developed for Mexican immigrant women with GDM to a) facilitate glycemic control, b) improve the financial burden of GDM on the national health-care system, c) mitigate the incidence of adverse maternal–fetal outcomes related to GDM, and d) decrease the future risk of developing type 2 diabetes in these women and their offspring.

Statement of the Problem

The literature presents abundant evidence that adherence to GDM management protocols promotes glycemic control and prevents complications related to GDM (Cardwell, 2013; Colberg et al., 2016; Harrison et al., 2016; Morampudi et al., 2017; Shao et al., 2017). Significantly, researchers have identified a correlation between social support and adherence to treatment, with people who had adequate social support showing higher adherence to treatment than those who did not have adequate social support (Affusim & Francis, 2018; DiMatteo, 2004; Gomes-Villas Boas et al., 2012; Gu et al., 2017; Johnson et al., 2008; Scheurer et al., 2012). Therefore, social support for Mexican immigrant women to facilitate adherence to GDM management protocols is of particular relevance.

The *Latina Paradox* postulates that Mexican immigrant women have favorable maternal–fetal outcomes because of the social support they receive from their collectivistic culture (Fleuriet, 2009; McGlade et al., 2004). However, some studies have suggested that Mexican immigrant women may actually lack social support (Callister & Birkhead, 2002; Campos et al., 2014; Nuñez et al., 2016). People who identify with collectivistic cultures, such as Mexican culture, may refrain from seeking social support due to the assumption that seeking social support will further burden their equally burdened social network (Chang, 2015). Hence, Mexican immigrant women with GDM may lack the social support needed to adhere to the GDM management protocols and achieve glycemic control.

Although multiple studies have explored social support, literature on social support of Mexican immigrant women with GDM and how social support can influence their adherence to the GDM management protocols remains rare. In particular, little is known about the perception of social support among Mexican immigrant women with GDM and the processes through which they seek and receive social support. Hence, the exigency of the constructivist GT study to generate theoretical explication of the social support processes of Mexican immigrant women with GDM as related to their culture and adherence to the GDM management protocols.

Purpose of the Study

The purpose of this study was to explore the perception of social support among Mexican immigrant women with GDM within the context of their culture and discern the process through which social support influenced their adherence to GDM management protocols. Specifically, this study explored:

1. The perception of social support among Mexican immigrant women with GDM within the context of their culture

2. The process through which Mexican immigrant women seek and receive social support.
3. How social support influences Mexican immigrant women's adherence to GDM management protocols.

Consequently, the theoretical knowledge derived from this constructivist GT study will enhance the current GDM management protocols to improve adherence in Mexican immigrant women.

Definitions

The definitions for social support and adherence vary among scientists. Thus, definitions are provided here to reflect this study's use of the terms social support and adherence and the common terminologies used in the constructivist GT methodology.

- **Social support** comprises social resources that are available, perceived, enacted, and received from social networks in a time of need to achieve specific goals and protect against adverse outcomes.
- **Adherence** is the degree to which a person correctly follows medical treatment and recommendations (World Health Organization [WHO], 2003).
- **Theoretical sampling** involves sampling participants to identify and pursue clues that challenge or elaborate on emerging claims (Charmaz, 2006).
- **Theoretical saturation** entails continuous sampling and coding until no new categories or variations of existing categories are identified (Willig, 2013).
- **Coding** is the identification of categories (Willig, 2013).
- **Categories** are the grouping of instances with common features and characteristics (Willig, 2013).

- **Constant comparative analysis** represents the continuous comparison of identified similarities and differences between emerging categories (Charmaz, 2014).
- **Negative case analysis** refers to identifying elements of the data that contradict the patterns that are emerging from the data (Willig, 2013).
- **Memo writing** involves maintaining a written record of emerging categories, labels given to them, the emerging relationship between the categories, and the progressive integration of low- and high-level categories leading to theory development (Willig, 2013).

Chapter Summary

Mexican immigrants constitute the largest minority subgroup in the United States, with the highest birth rate (US Census Bureau, 2017), while the incidence of GDM and related adverse maternal–fetal outcomes in Mexican immigrant women are high compared to those of White women (DeSisto et al., 2014; Hedderson et al., 2010). Various studies have demonstrated that adherence to prescribed GDM management protocols could prevent complications related to GDM (Cardwell, 2013; Harrison et al., 2016; Shao et al., 2017). Although Mexican immigrants are presumed to have adequate social support due to their collectivistic culture, research has suggested that Mexican immigrant women may actually lack social support (Callister & Birkhead, 2002; Campos et al., 2014; Nuñez et al., 2016) which can impede their adherence to GDM management protocols and achieving glycemic control (Affusim & Francis, 2018; Gu et al., 2017). Nevertheless, there is a scarcity of literature and a gap in the understanding of the processes that facilitate social support of Mexican immigrant women with GDM and the influence of social support on their adherence to GDM management protocols exists. Thus, this constructivist GT study fills this gap in its exploration of the perception of social support among

Mexican immigrant women with GDM within the context of their culture. Furthermore, the study reveals how they seek and receive social support and discerns the process through which social support influences their adherence to the GDM management protocols.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter features a synthesis of the available literature on GDM, adherence, Mexican culture, and social support. The first section offers a review of current recommendations and guidelines for the management of GDM, followed by the second section, which contains a synthesis of the evidence on the concept of adherence and its importance in disease management. Next, the third section presents a literature review of Mexican culture. Lastly, the fourth section comprises a synthesis of the literature on the concept of social support and how social support relates to general health, GDM management, adherence, and Mexican culture.

Due to the scarcity of literature relating exclusively to Mexican culture, most studies have used the term Hispanic, Mexican, and Latina interchangeably as umbrella terms for persons of Mexican, Cuban, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race (Office of Minority Health, 2019). In this document, the terms Mexican and Latina will indicate individuals who have originated from Mexico.

Peer-reviewed research and scholarly literature written in the English language were obtained from the: Cumulative Index for Nursing and Allied Health Literature (CINHAL), EBSCOhost, Science Direct, Johana Briggs Institute (JBI), Google Scholar, PubMed, ProQuest, and the Agency for Healthcare Research and Quality (AHRQ). No date limitation was placed on the articles about social support to capture the origin and evolution of social support. However, other articles were limited to 20 years since publication. Keywords searched included gestational diabetes, GDM management, social support, adherence, Hispanic population, Mexican population, Mexican women, Mexican culture, GT, and constructivist GT.

Gestational Diabetes Mellitus

In pregnancy, especially in the second and third trimesters, the placenta produces diabetogenic hormones that cause hyperglycemia (Plows et al., 2018). In most pregnant women, the pancreas produces enough insulin to meet this physiologic demand, thereby maintaining a normal blood glucose level. In some cases, hyperglycemia persists, resulting in a diagnosis of GDM. (Plows et al., 2018). GDM has significant negative maternal–fetal sequelae (ACOG, 2019; ADA, 2019; Plows et al., 2018) including maternal cardiovascular disorder, instrumental delivery, maternal pelvic floor injury, neonatal hypoglycemia, neonatal hyperglycemia, macrosomia, shoulder dystocia, stillbirth, and development of type 2 diabetes (ACOG, 2019; ADA, 2019).

Universal screening for GDM is routinely done between 24–28 weeks' gestation. However, in the presence of predisposing factors, screening may be performed sooner. Examples of such factors are, prior history of GDM, family history of diabetes, history of polycystic ovary syndrome (PCOS), overweight or obesity, ethnic minority, previous delivery of a large-for-gestational-age baby, and advanced maternal age. (ACOG, 2019; ADA, 2019; Plows et al., 2018).

Once a diagnosis of GDM is made, the woman is prescribed a GDM management protocol that includes diabetes education and counseling, strict dietary and lifestyle modifications, strict blood glucose self-monitoring, and fetal surveillance with a goal of glycemic control to decrease the incidence of adverse maternal–fetal outcomes related to GDM (ACOG, 2018; ADA, 2019; Shields & Tsay, 2015). The women are seen in the clinic at 1 to 2-week intervals to monitor adherence to the GDM management protocol and blood glucose control, along with routine maternal and fetal evaluations. (Durnwald et al, 2019). Fetal

surveillance is recommended to start at 32-week gestation and may involve bi-weekly non-stress test and weekly ultrasound for fetal biophysical profile (ACOG, 2018). If lifestyle modifications are unsuccessful in achieving glycemic control, medications may be prescribed (ACOG, 2018; ADA, 2019; Moses et al., 2009).

Gestational Diabetes Mellitus Education and Counseling

Specially trained nurses administer GDM education which begins upon the diagnosis of GDM until after delivery (Evert & Hei, 2006; Shields & Tsay, 2015). This practice involves educating the woman about GDM and associated risks, nutritional recommendations, activity recommendations, weight-control strategies, blood glucose self-monitoring, recommendations for clinic follow-up. If indicated, the woman will be taught how to take her oral medications or self-administer insulin injections (Evert & Hei, 2006; Shields & Tsay, 2015). Follow-up education and counseling appointments are scheduled to check blood sugar and diet logs, evaluate the effectiveness of and ensure adherence to the prescribed GDM management protocol, and reeducate the patient as necessary (Evert & Hei, 2006; Shields & Tsay, 2015).

Dietary and Lifestyle Modifications

Experts have designated dietary and lifestyle modifications as the first line of treatment for GDM (ACOG, 2018; ADA, 2019; Garcia-Patterson et al., 2019; Hernandez & Brand-Miller, 2018; Moses et al., 2009; Yamamoto, 2018). The ADA (2017) has estimated that 70-85% of women with GDM can achieve glycemic control and mediate adverse maternal–fetal outcomes by adhering to the prescribed diet, exercise, and weight control. According to blood glucose level target recommendations from the Fifth International Workshop-Conference on Gestational Diabetes Mellitus (2005), glycemic control for GDM is defined as follows: fasting blood glucose ≤95 mg/dL and 1-hour postprandial blood glucose ≤140 mg/dL or 2-hour postprandial ≤120

mg/dL (Metzger et al., 2007). Elevated fasting blood glucose levels in GDM are predictive of increased neonatal fat mass (ACOG, 2018), whereas elevated postprandial blood glucose levels are predictive of all other complications related to GDM (Crowther et al., 2005; Durnwald et al., 2011; Magon & Seshiah, 2011; Metzger et al., 2008).

Researchers have also reported that carbohydrate is the main nutrient that affects postprandial glucose levels (Blaak et al., 2012; Sheard et al., 2004). In several randomized controlled trials (RCT), scientists concluded that maintaining a low-carbohydrate and low-glycemic index diet reduced the need to use insulin for glycemic control (Grant et al., 2011; Mahajan et al., 2019; Moses et al., 2009; Perichart-Perera et al., 2009; Viana et al., 2014), and a number of systematic reviews showed that restricted carbohydrates resulted in low fasting, low postprandial glucose (Hernandez et al., 2016; Mahajan et al., 2019; Zhang et al., 2018), and low fetal adiposity (Hernandez et al., 2016; Viana et al., 2014; Wei et al., 2016).

Consequently, many scholars have recommended a carbohydrate-controlled and low-glycemic-index meal plan that balances the nutritional needs of a healthy pregnancy and achieves glycemic control to manage GDM (ACOG, 2018; ADA, 2019; Farabi & Hernandez, 2019; Magon & Seshiah, 2011). The research has suggested that carbohydrate intake should be limited to 33%–40% of total daily caloric intake (ACOG, 2018) or 175 grams of carbohydrates per day (Hanson et al., 2015). Additionally, women with GDM are required to eat smaller portions consisting of three meals and two snacks per day to limit glucose fluctuations and sustain glycemic control (ACOG, 2018).

However, in a systematic review of eight RCTs that included 544 participants, scientists concluded that in approximately 39% of the women with GDM, diet alone did not sufficiently control postprandial glycemia (Harrison et al., 2016). Several other studies have shown that

exercise stimulated glucose uptake in the muscle, thereby decreasing blood glucose levels (Boule et al., 2001; Golbidi & Laher, 2013; Mishra & Kishore, 2018). Hence, researchers have recommended exercise as an adjunct to dietary modification to enhance glycemic control (ACOG, 2018; ADA, 2017; Harrison et al., 2016). Accordingly, women with GDM are required to do moderate-intensity aerobic exercises at least 30 minutes a day, especially 10–15 minutes after meals, 5 days a week (ACOG, 2018). Granted, these studies presented compelling evidence for dietary and lifestyle modifications, they did not consider or discuss cultural factors that might influence adherence to these diet and exercise recommendations.

Mexican Culture

Haviland et al. (2011) defined culture as "a society's shared and socially transmitted ideas, values, and perceptions, which are used to make sense of experience and generate behavior and are reflected in that behavior" (p. 324). Hence, cultural values and norms guide how people behave and relate to each other and the world around them (WHO, 2009). Mexican culture encompasses social and family values, traditions, language and expressions, religious beliefs and practices, foods, and the history of Mexican people. These cultural factors guide the Mexican individuals' perceptions of health, illness, and death, beliefs about health promotion, diseases, and treatments, expression of pain and discomfort, and decisions regarding seeking and accepting help (Singleton & Krause, 2009).

Mexican immigrant women's health care decision making process and social relations are frequently influenced by their cultural heritage, traditions, and practices (Kaplan et al., 2001). The AHRQ emphasized the significance of culture in a person's understanding of health concepts, health practices, and health care decision-making (Brega et al., 2015). On a related note, research has shown that the adequacy and effectiveness of social support are dependent on

the cultural context (Kim et al., 2008). Thus, gaining an understanding of Mexican culture is imperative to understand the perception of social support of Mexican immigrant women with GDM within the context of their culture.

Language

Language is an innate characteristic of culture that communicates cultural beliefs, customs, and values that strengthen cultural identity and solidarity (Weitzman, 2013). However, language can also create a divide and restrict people from socializing; for example, when an individual immigrates to a country where the spoken language is different from the immigrant's indigenous language, the immigrant can feel left out and insecure, leading to withdrawal and social isolation and subsequently a lack of social support (Morgan-Consoli et al., 2012b).

Mexican immigrants are highly protective of maintaining their culture, including language and cultural traditions, beliefs, and values (Callister & Birkhead, 2008). While several different dialects exist in Mexico, 90% of Mexican citizens speak Spanish (Terborg et al., 2006). As such, Spanish is the predominant language spoken by Mexican immigrants in the United States. Although many Mexican immigrants eventually learn to speak English, a language barrier exists, especially in the case of recently immigrated Mexicans (Morgan-Consoli et al., 2012b). This language barrier serves as a source of added stress and social isolation for Mexican immigrants, which can lead to a lack of social support (Arbona, 2010; Morgan-Consoli et al., 2012b; Hurtado-de-Mendoza et al., 2014).

Family Values

Family is the most significant social unit for the Mexican people (Smith-Morris et al., 2012; Steidel & Contreras, 2003; Suro, 2007), with women playing the central role in maintaining the family unit. In Mexican culture, women are the force that holds the family

together, performing the day-to-day activities of raising children and caring for the household, organizing family life, and maintaining traditions (Caballero, 2011; Eggenberger et al., 2006; Sable et al., 2009). The Mexican family interconnects with both nuclear and extended family members, forging a strong sense of attachment and identification (Smith-Morris et al., 2012; Steidel & Contreras, 2003; Suro, 2007). As such, one of the core values in Mexican culture is *familismo*.

Familismo refers to the sense of family identity, family loyalty, honor, respect, obligation, cooperation, and protection that Mexican people afford their nuclear and extended family (Ayon & Aisenberg, 2010). This term emphasizes the collectivistic nature of Mexican culture that focuses on the values and well-being of the family rather than on individual needs and opinions (Ayon & Aisenberg, 2010; Caballero, 2011; Eggenberger et al., 2006). It is not unusual for Mexicans (especially Mexican women) to make personal sacrifices, including sacrificing their health needs if they conflict with the needs or opinions of the family or upset family harmony (Caballero, 2011; Mansyur et al., 2015). Therefore, family perceptions and opinions are a major influence on Mexican health beliefs and behaviors and a major factor in their health-care decision-making process (Antshel, 2002; Caballero, 2011; Eggenberger et al., 2006). The failure of health-care providers to recognize *familismo* when planning care for Mexican immigrants can lead to conflicts, dissatisfaction, and poor adherence to care.

Gender Roles

Gender roles (*machismo* and *marianismo*) are socially acceptable norms and beliefs that guide male and female relationships in Mexican culture (Nuñez et al., 2016; Pinos et al., 2016). The male gender role, *machismo*, relates to values, attitudes, and beliefs that are thought to project aggressiveness, hypersexuality, and the perception of women having a role that

encourages male dominance over them (Pinos et al., 2016). The term also signifies the honor, bravery, pride, responsibility, obligation, and family protection that the man bestows on his family (Nuñez et al., 2016). *Marianismo*, the female gender role, is based on the emulation of the Virgin Mary and depicts the woman or *marianista* as nurturing, passive, humble, respectful, devoted, and self-sacrificing to her family (Kulis et al., 2003; Mendez-luck & Anthony, 2015).

A *marianista* is considered spiritually superior, respectful of the patriarch and patriarchal power structures, appeasing, and harmonious in her relationships (Castillo et al., 2010; D'Alonzo, 2012; Kulis et al., 2003; Nuñez et al., 2016). Additionally, a *marianista* is expected to tolerate the demands of motherhood, live in the shadow of her family, support and protect her family by all measures needed without complaining, and prioritize the family's needs and happiness over hers (Kosmicki, 2017; Mendez-Luck & Anthony, 2016; Nuñez et al., 2016). This *marianista* concept earns the woman respect as the matriarch of the family as well as reverence in the community (Kosmicki, 2017).

Though *machismo* has positive values, whereby the man exhibits a strong leadership and protection over the family, it also encourages aggression, womanizing, dominance over the woman, and domestic violence (Nuñez et al., 2016). *Marianismo,* on the other hand, compels the woman to protect and maintain harmony in the family at all costs, while also encouraging the woman to be passive, subservient, and neglect her needs for the needs of others (Nuñez et al., 2016). The *marianista* may refrain from discussing her needs or family issues with others, especially health-care providers (Caballero, 2011; Mansyur et al., 2015). For Mexican immigrant women with GDM, the negative constructs of *machismo* and *marianismo* can exert added pressure and stress on them and trigger negative cognitive-emotional responses that may

predispose them to a lack of social support (De Oliveira et al., 2016; Molina & Alcantara, 2013; Nuñez et al., 2016) and impede their adherence to the GDM management protocols.

Religion, Spirituality, and Folk Healers

Religion, spirituality, and folk healing intertwine and are integral to Mexican culture. They serve as a source of strength and coping with life's struggles. Many Mexicans consider the combination of religion, spirituality, and folk healing as principal factors to maintaining health and longevity (Campesino & Schwartz 2006; McNeil & Cervantes, 2008). Approximately 82% of Mexicans follow the Catholic religion and strongly believe in the power of prayer (Zimmermann, 2017). However, they may also believe in *fatalismo*, a belief that illness is God's will or divine punishment for sinful behavior and that fate cannot be changed (Abraido-Lanza et al., 2007; Campesino & Schwartz, 2006; Morgan-Consoli & Llamas, 2013). Belief in *fatalismo* may prevent believers from seeking help or health-care services (Abraido-Lanza et al., 2007).

Despite being devout Catholics, some Mexicans may also believe in supernatural powers and superstitions, including curses, witches, and the evil eye, which may lead them to seek relief from folk healers (Caplan et al., 2013), a concept referred to as *curanderismo* (Padilla & Villalobos, 2007). Folk healers or *curanderas* are educated through long apprenticeships and are believed to be natural-born healers with spiritual talents who have been bestowed the power to heal by a higher power; as such, they are highly trusted (Tafur et al., 2009; Torres & Sawyer, 2005). Folk healers specialize in physical, mental, emotional, and spiritual health and they believe in homeostasis as the mainframe for health (Tafur et al., 2009).

The concept of homeostasis that the *curanderas* follow is centered on the notion that a balance of hot and cold is important to maintain health equilibrium. Cold foods are believed to counterbalance diseases that are caused by heat, whereas hot foods counterbalance diseases that

are caused by cold (Tafur et al., 2009). Notably, up to 77% of Mexican Americans use complementary or alternative therapies to manage their symptoms or illnesses (Nguyen et al., 2014; Rivera et al., 2002). Indeed, some Mexican Americans prefer folk healers over allopathic health-care providers, relying on the former for their health-care guidance (Tafur et al., 2009). Even if they do not consult with folk healers directly, some Mexican Americans integrate traditional beliefs and practices into their health care through elder family members and friends (Padilla & Villalobos, 2007).

Considering that family perception and opinions impact health-care decision-making, if family members do not believe that the symptoms are serious or they do not support the doctor's findings or treatment plan, the person may be discouraged from seeking health care or complying with treatment (Hu et al., 2013). More importantly, if health-care decisions are not made in conjunction with the family or if cultural influence is not respected, Mexicans immigrants are likely to reject conventional medicine and turn to their folk healers or even receive no care at all (Tafur et al., 2009). Ultimately, Mexican immigrant women with GDM may lack support for conventional GDM management protocols from their support network if they subscribe to *curanderismo*.

Foods

In Mexican culture, food builds a sense of unity and inclusion, nostalgia, and contentment and provides a sense of joy, happiness, and pleasure (Counihan, 2009; Perez, 2010). Foods common in Mexican culture include maize, flour, sweet bread, rice, roots, such as jicama, beans, chili, fruits and vegetables, and animal protein (Albala, 2013). Also indigenous to Mexican culture is the use of moles or salsas made with ingredients including Mexican chocolate, chili peppers, tomatoes, onion, garlic, and avocado. These traditional Mexican foods are potentially

healthy because they are high in fiber, contain less sugars, and potentially have lower glycemic indices (Santiago-Torres et al., 2016). However, in different combinations, some Mexican meals can contain high carbohydrate contents with high glycemic indices, that would require modifications to comply with GDM recommendations (Hu et al., 2013). For example, a typical Mexican meal is not complete without tortillas (made from maize or flour), rice, and beans (Saldana & Felix, 2011). Together, the combination of tortilla, rice, and beans in one meal serving can potentially constitute a high glycemic index meal.

As the primary caregivers in the family, Mexican women have substantial influence over what foods are maintained or introduced into the family. However, they frequently assign their needs secondary importance to those of the family (Sable et al., 2009). Since food is a way to express culture and perpetuate cultural identity, Mexican women cook traditional Mexican foods for their family and are likely to eat the same foods (Kittler & Sucher, 2003). This can have a major impact on their adherence to the GDM management protocols. Thus, the conventional dietary recommendations for diabetes, which are not culturally specific, have a high incidence of nonadherence (Alfadhli, 2015).

Summary of Mexican Culture

Although Mexican cultural characteristics can offer Mexican immigrants' familiarity, comfort, hope, and resilience (Morgan-Consoli & Unzueta, 2018), they can also be a source of distress and diminished social support (Alegria et al., 2007; Nuñez et al., 2016). The "Latino Paradox" postulates that Mexican women have an abundance of social support because of their collective culture. However, multiple studies have shown that many of these women actually lack social support due to the expectations imposed by their cultural traditions and values, such as *familismo, machismo*, and *marianismo* (Campos et al., 2014; Nuñez et al., 2016). The women

in this culture are expected to protect the integrity of the family and prioritize the needs of everyone else over their own needs. More importantly, Mexican immigrant women may refrain from seeking social support due to their collectivistic culture, because they share the cultural assumption that seeking social support would further burden people in their social network who are assumed to be equally burdened (Kim et al., 2008). Consequently, the lack of social support may impede their adherence to the GDM management protocols, leading to poor glycemic control and adverse maternal–fetal outcomes.

Adherence

Adherence, according to the WHO (2003), is the extent to which a person's behavior, such as taking medication, following a diet, and executing lifestyle changes, corresponds with health care providers' recommendations. Adherence is a key concept in health care that is determinant of treatment effectiveness (Gardner, 2014). According to the WHO (2003), only about 50% of patients with chronic illnesses in developed countries adhere to prescribed therapies, and the percentage is even lower in developing countries. Poor or nonadherence results in ineffective treatment, which threatens patients' lives and safety and lowers quality of life (vanDulmen et al., 2007; Gardner, 2014; Haynes et al., 2005; Iuga & McGuire, 2014; Sabate, 2003).

Adherence is a complex behavior with several social, economic, patient-related, and treatment-related factors influencing levels of adherence in patients (Viswanath et al., 2012). Several studies have reported that clinicians frequently have no awareness of the reasons behind patient nonadherence (Clayton et al., 2010; Pope & Scott, 2003). In some qualitative studies, patients expressed that health-care professionals often blamed them rather than attempted to understand the underlying reasons for their nonadherence (Bissell et al., 2004; Rose et al., 2000).

The WHO (2003) proposed a perspective that nonadherence may result from patient frustration, suggesting that patients may get frustrated if their preferences are not considered when planning their care. In alignment with that perspective, Bissonnette (2008) concluded that adherence depends on the willingness of the patient to accept the prescribed treatment. Hence, a patient who does not agree with or accept the care plan, is not likely to adhere to the treatment plan.

In a concept analysis of adherence, Lyu and Zhang (2019) identified social support as one of the antecedents of adherence, stating that support from family, partners, friends, and health-care providers may improve adherence to treatment by facilitating effective coping. Likewise, in a meta-analysis of 122 studies, DiMatteo (2004) found a correlation between social support and improved adherence to treatment regimens. Specifically, practical, emotional, and unidimensional social support, such as family cohesiveness, positively influenced adherence to treatment, with practical social support yielding the highest effect (DiMatteo, 2004). These study results are congruent with the conclusion of other studies that found a correlation between a lack of social support and nonadherence to treatment (Affusim & Francis, 2018; Gomes-Villas Boas et al., 2012; Gu et al., 2017; Johnson et al., 2008; Lemstra et al., 2018; Magrin et al., 2014; Scheurer et al., 2012).

While these studies articulated the importance of adherence to treatment and suggested social support as a requisite for adherence, they also have provided significant evidence for cultural influence on both social support and adherence. An observational study from 2006–2012 showed that Latino patients had poorer medication adherence rates than Whites (Fernandez et al., 2017). This finding is consistent with other studies that concluded that Latinos have lower adherence rates to treatment regimens (Baghikar et al., 2019; White, 2015; Xie et al., 2019). Several studies attributed the poor adherence rate in Mexican patients to a lack of social support

(Lanouette et al., 2009; McQuaid & Landier, 2017; Zagaar & Ndefo, 2017). Presumably, the disparity in glycemic control and adverse maternal–fetal outcomes between Mexican immigrant women and White women may be due to nonadherence related to a lack of social support.

Social Support

Social support has long been associated with health and disease management, however, the precise mechanism by which social support influences health and disease management is not completely understood. Some scientists have suggested that social support buffers against harmful effects of stress (Cassel, 1974; Cohen & Wills, 1985), while others have asserted that social support influences the ability to adjust and live with illness (Helgeson & Cohen, 1996; Taylor et al., 1986). Some authors have even suggested that adherence may be the mediating factor between social support and positive health outcomes (DiMatteo et al., 2002; DiMatteo, 2004). The need to gain an understanding of the connection between social support, adherence, and health, especially in Mexican immigrant women with GDM, undergirds the importance of understanding the concept of social support.

Over the years, researchers have proposed different versions of the definition for social support. However, the most comprehensive definitions were proposed by Gottlieb and Bergen (2010) and the National Cancer Institute (n.d.). Gottlieb and Bergen (2010) defined social support as "the social resources that persons perceive to be available or that are provided to them in the context of both formal support groups and informal helping relationships" (p. 512). The National Cancer Institute defined social support as a network of family, friends, neighbors, and community members that is available in times of need to give psychological, physical, and financial help.

The definition of social support used in the current study incorporates both definitions: the social resources that are available, perceived, enacted, and received from social networks in time of need to achieve specific goals and protect against adverse outcomes. This definition captures the essence of social support from the viewpoint of the provider and recipient of social support as a transactional or interactive process (Vaux, 1988; Schwarzer & Leppin, 1991), which means that social support relies on social relationships and social interactions.

Dr. John Cassel (1974) first proposed the concept of social support and argued that people who have strong social ties are protected from the pathogenic effects of stress. Since then, numerous scientists have studied and presented different perspectives of social support. For instance, Cobb (1976) studied social support through an information lens, rather than a goods and services lens. As a result of the study findings, the researcher explicated social support as information that leads a person to feel cared for, esteemed and valued, giving them the perception of belonging in a network of communication and mutual obligation. Subsequently, when these feelings were achieved, people coped better with crises, stayed in treatment, and had better health outcomes (Cobb, 1976).

Conversely, Schwarzer and Leppin (1991) expounded social support as a process that is both interactive and altruistic, whereby there is a sense of obligation and inclination to assist and be assisted. This concept has been further articulated in two subconstructs: subjective (perceived or prospective) and objective (received or retrospective) social support (Lake & Cohen, 2000; Schwarzer & Knoll, 2007; Zhou et al., 2017). Perceived social support was explained as the social support a person anticipates is currently or will be available to them when needed, whereas received support is the support provided to them at the time of need, with both considered

equally important and influential to the effectiveness of enacted social support (Alegria et al., 2007; Lake & Cohen, 2000; Schwarzer & Knoll, 2007; Zhou et al., 2017).

Lakey and Cohen (2000) further discussed three theoretical perspectives of social support: the stress and coping, social constructionist, and relationship perspectives. Dr. Cassel (1974) initially coined the stress and coping perspective, which several studies validated (Barrera, 1986; Cobb, 1976; Cohen & Wills, 1985; Thoits, 1986). This perspective hypothesized that social support, through the perception of support or supportive actions, mitigates the adverse effects of stressful life events on health (Lakey & Cohen, 2000). The social constructionist perspective hypothesized that social support promotes self-esteem and self-regulation despite a stressful event, whereas the relationship perspective hypothesizes that social support influences relationship processes, including companionship, intimacy, and low social conflict (Lakey & Cohen, 2000).

Vaux (1988, 1990) conceptualized social support in three components: (a) support network resources, describing the relationships that provide the necessary assistance to achieve goals; (b) supportive behavior, comprising the deliberate acts that are intended to assist a person in achieving those goals; and (c) subjective appraisals for support, which refers to the recipient's evaluations of support network resources and supportive behaviors. Furthermore, the types of social support can be categorized as emotional, instrumental, informational, and appraisal support (Vaux, 1988).

According to Vauz (1988) emotional support can be provided through expressions of empathy, love, trust, and caring. In contrast, instrumental support is provided through material assistance and service provision. Informational support is the provision of advice, suggestions, and information that helps the person reach their goals. Lastly, appraisal support is the provision

of information that encourages and affirms the person. Importantly, the effectiveness of social support depends on multiple factors: (a) the development and maintenance of a support network and resources; (b) awareness of when and what type of support is needed; and (c) the appropriate source of the needed support, cultural expectations regarding the appropriateness of needing, seeking, and accepting social support, and appraisal of the support (Baqutayan, 2011; Gottlieb & Bergen, 2010; Vaux, 1990).

Although researchers have noted different perspectives of social support and how social support can influence general health and well-being, the literature is scarce on the perception of social support among Mexican women with GDM within the context of their culture and the influence of social support on their adherence to the GDM management protocols. Considering that the constructivist GT methodology is designed to facilitate the exploration and understanding of social processes based on participants' lived experiences, a constructivist GT study of social support within the cultural context of Mexican women with GDM seems imperative.

Social Support and Health

Compelling evidence exists in the literature regarding the positive impact of social support on physical and psychological health. Multiple studies have concluded that social support mitigates the pathogenic effects of psychological stress or disorders and promotes coping and resilience in stressful conditions (Baqutayan, 2011; Cohen & Pressman 2004; Dai et al., 2016; Gellert et al., 2018; Kornblith et al., 2001; Rao et al., 2012; Sippel et al., 2015). For example, studies on the psychological effects of war on veterans indicated that those who had social support had fewer incidences of posttraumatic stress disorder (PTSD) and substance abuse

compared with those who had inadequate social support (Gros et al., 2016; Kaniasty & Norris, 2008; Koenen et al., 2003).

Likewise, Dai and colleagues (2016) conducted a quantitative study of 321 victims of the Dongting Lake (China) flood in 1998 who were already diagnosed with PTSD. They followed the participants over a period of 13–14 years and concluded that social support was instrumental in the full recovery of the 85% participants who recovered from PTSD. The results were similar in a prospective observational study of 3,432 young adults with acute myocardial infarction (Bucholz et al., 2014). The researchers measured levels of social support in the participants using the ENRICHD Social Support Inventory and found that participants who reported low social support had lower functional status and quality of life and more depressive symptoms at baseline and 12 months after the incidence of acute myocardial infarction.

Furthermore, high-quality social support was found to improve the prognosis of chronic illnesses, facilitate recovery from illness, and improve quality of life (Baqutayan, 2011; Bucholz et al., 2014; Elloker & Rhoda, 2018; Ikeda et al., 2008). A meta-analytic review regarding the influence of social support on the risk for mortality in people who have cancer and cardiovascular, renal, and neurological diseases showed a 50% increased chance of survival in the patients who had social support, while the patients without social support showed up to a 32% increased risk of mortality (Holt-Lunstad et al., 2010; Holt-Lunstad et al., 2015). Although these studies demonstrated the positive influence of social support on health outcomes, researchers have yet to explore the impact of social support on the GDM management of Mexican women.

Social Support and GDM Management

Clearly, social support from the family or a lack thereof affects acceptance of the illness as well as the behavioral changes necessary to adhere to disease management protocols (Aikens et al., 2014; Roblin 2011). Although several studies have examined the impact of social support on GDM management (Ingstrup et al., 2019; Iwanowicz-Palus et al., 2019; Kim et al., 2008), the type of social support and the process through which social support influences GDM management remains unclear.

In a qualitative descriptive study, researchers studied nine women who had GDM and two peer counselors (Ingstrup et al., 2019). The participants were placed in one of two groups: a lifestyle modification program and a control group. The lifestyle modification group received regular theory-guided, peer-led telephone support after an initial four-hour instruction by a certified exercise specialist. The other group received generic public health guidelines for healthy eating and active living. Participants in both groups indicated that they received complementary (emotional and instrumental) support from their social network (family, friends, and colleagues) outside of the study. Those in the intervention group revealed that the social support they received from peer counselors encouraged, motivated, and held them accountable to make changes that supported their GDM management activities. However, participants in both groups indicated that the most helpful support was the complementary support they received from their social networks. Specifically, they reported that emotional support provided them with encouragement, appraisal support provided motivation, while instrumental support like childcare decreased their stress level (Ingstrup et al., 2019). Thus, support from social networks as well as emotional support and instrumental (practical) support such as childcare seem to decrease stress for women with GDM.

Similarly, a focus group of 30 women with GDM identified social support from family as instrumental in maintaining lifestyle changes that support GDM management activities (Muhwava et al., 2019). The women all expressed the importance of encouragement and motivation from partners, family, and friends in their GDM management. Some of the women noted that family members changed their diet to support them and ensure that they adhere to their diet (Muhwava et al., 2019). Social support also emerged as a critical factor in Iwanowicz-Palus et al.'s (2019) quantitative study of 339 women with GDM, where the authors reported that participants who reported high levels of social support (perceived emotional and received instrumental support) demonstrated high levels of illness acceptance. Furthermore, the researchers found that illness acceptance supported the implementation of lifestyle changes necessary for disease management.

Conversely, research has identified a lack of social support was identified as a barrier to adherence and glycemic control. A literature review of 58 quantitative and qualitative studies concluded that a lack of social support and social isolation were barriers to maintaining lifestyle changes that support GDM management activities (Nielsen et al., 2014). Along similar lines, a qualitative study of 60 pregnant women with GDM (Martis et al., 2018) and a systematic review of 41 qualitative studies (Craig et al., 2020) identified a lack of support from partners and family members as a barrier to achieving GDM management goals. Immigrant participants particularly mentioned feeling isolated and lonely as barriers to adhering to their GDM management protocols (Craig et al., 2020). While these studies emphasized the importance of social support to GDM management activities, they were not particular to any ethnicity. Neither did they illuminate the process involved in social support or provide a cultural context for pregnant

Mexican immigrants. More study is necessary to uncover these basic processes and perceptions such as the theory building approach of the current study.

Social Support and Adherence to Treatment

Adherence to diabetes management activities promotes glycemic control and prevents complications (Cardwell, 2013; Harrison et al., 2016; Shao et al., 2017) while social support improves adherence to diabetes and other disease management protocols (DiMatteo et al., 2002; DiMatteo, 2004; Miller & DiMatteo, 2013). However, scholars have revealed conflicting perceptions of the specific types of social support that are most effective in enhancing adherence to diabetes and other disease management protocols.

Shao et al. (2017) studied the effect of social support on the diabetes outcome of 532 patients concluding that social support, especially subjective (perceived or prospective) social support, positively influenced adherence to treatment. The authors also asserted that achieving normal blood glucose levels was completely mediated by the effect of social support on adherence. Likewise, Aikens et al. (2014) conducted a quasi-experimental study of 98 patients who were non adhering to their diabetes treatment, seeking to determine if integrating a patient-selected support person into an automated diabetes telemonitoring and self-management program would benefit medication adherence. They found that participants who involved their support persons in their diabetes management had a 25% decrease in nonadherence per week. In contrast, nonadherence remained high for those who did not include support persons (Aikens et al., 2014).

Although several other studies also found a positive correlation between social support and adherence to treatment (Affusim & Francis, 2018; DiMatteo, 2004; Gomes-Villas Boas et al., 2012; Gu et al., 2017; Johnson et al., 2008; Scheurer et al., 2012), the type of social support that influences adherence remains inexplicit. In a meta-analytic review of 122 studies on

adherence to medical regimens, DiMatteo (2004) concluded that practical (instrumental) support improved adherence to treatment by approximately 27%. Meanwhile, while Rosland et al. (2008) conducted a cross-sectional survey of 164 African American and Latinos with diabetes and found that all social support from family and friends positively influenced adherence to the diet modification and blood glucose monitoring aspects of the diabetes management protocols.

Furthermore, some studies have suggested that different rates of adherence exist among people of different ethnicities (Adams et al., 2013; Xie et al., 2019). For example, Adams et al. (2013) examined the rate of adherence to chronic disease treatment and found that nonadherence among Hispanics was 26.9% compared to 16.7% in Whites. In a similar vein, Xie et al. (2019) concluded that adherence to treatment in Hispanics was 7.5 percentage points lower than it was for Whites. The discrepancy in adherence based on ethnicity potentially explains the prevalence of GDM, the high incidence of nonadherence to GDM management protocols, and the adverse maternal–fetal outcomes in Mexican women. Hence, investigating social support in a cultural context and ascertaining how social support impacts adherence, particularly how different types and levels of social support influence different adherence rates is imperative.

Social Support and Mexican Culture

Scientists have concluded that social support is most effective when it takes a form that is congruent with the relationships and expectations prevalent in the culture (Chen et al., 2012; Kim et al., 2008). Studies have revealed considerable cultural differences in how people seek and accept social support. Individualistic cultures, such as the dominant culture of the United States, encourage self-focus and independence; consequently, members of this culture may view seeking social support as a weakness (Kim et al., 2008). In collectivistic cultures, such as Mexican culture, individuals rely heavily and thrive on extensive social support from others in the group

(Fuller-Iglesias & Antonucci, 2016; Mojaverian et al., 2012). However, they also place prioritize the needs of the group over individual needs (Kim et al., 2008). Hence, people in collectivistic cultures may refrain from seeking social support so as not to burden others in their support system (Chang, 2013; Kim et al., 2008).

This collectivistic perspective is evident in Mexican immigrant women who sometimes do not seek social support to spare others the added burden of supporting them (Chang, 2013). The characteristic Mexican core values of *familismo*, *machismo*, and *marianismo* compel the women to prioritize the values and well-being of their family over individual needs and opinions (Ayon & Aisenberg, 2010; Caballero, 2011; Eggenberger et al., 2006). Thus, it is not unusual for Mexican women to make personal sacrifices, including sacrificing their health needs if they conflict with the needs or opinions of the family or for the sake of harmony in the family (Caballero, 2011; Hu et al., 2013; Mansyur et al., 2015).

Unsurprisingly, several qualitative studies of Hispanic women, including Mexican women, identified a lack of social support as a barrier to making and sustaining changes that support their diabetes management protocol (Collier et al., 2011; Hu et al., 2013; Marquez et al., 2009). For example, in a focus group of 35 women, of which eight were Hispanic, the women cited a lack of support from family and friends, especially a lack of assistance with such responsibilities as caring for children, as a major barrier to making and sustaining GDM management activities (Collier et al., 2011). In another focus group of 73 Hispanic women (including those of Mexican origin), the participants cited a lack of understanding and support from family, especially spouses, for their nonadherence to dietary modifications (Hu et al., 2013). In particular, the women stated that family members lacked an understanding of what the GDM management protocols entailed and described difficulties with preparing different foods

for themselves and their family to adhere to the dietary restriction of the GDM management protocols (Hu et al., 2013). On a related note, Mansyur and colleagues (2015) studied the effect of social support and social norms and barriers on adherence to diabetes management. They found that compared to their male counterparts, women of Hispanic origin were predisposed to a lack of social support due to cultural and social norms associated with the woman's role in the family. These study findings provide conclusive evidence that women exhibit lower levels of adherence to their diabetes management protocols when lacking social support. Clearly laying the foundation for this GT study.

Gaps in the Literature

Although literature on GDM and GDM management, the concept of adherence, and social support is abundant, most of the literature available concerns a heterogenous population of Hispanic women and Hispanic culture. Several studies identified a higher level of nonadherence to treatment in Hispanics than in Whites, while in other studies Hispanic women cited a lack of social support as a barrier to achieving GDM management goals. Nonetheless, there is a scarcity of literature specific to Mexican immigrant women with GDM regarding their perception of social support within the context of Mexican culture and the influence of social support on their adherence to the GDM management protocols. Prior studies failed to satisfactorily explain the processes that facilitate social support in this population or the influence of social support on their adherence to recommended lifestyle regimen. Consequently, current GDM management protocols are not sensitive to the intricacies of the lives of Mexican immigrant women and how they influence their adherence to GDM management protocols. These points underline the importance of a GT study to understand the perception of social support among Mexican women

with GDM within the context of their culture and the influence social support can have on their adherence to the recommended GDM management protocol to ensure optimal outcomes

Chapter Summary

This chapter reviewed the extant literature to establish a foundation and direction of inquiry for the current study. The literature review demonstrated the importance of adherence to GDM management protocols to achieve glycemic control and prevent adverse maternal–fetal outcomes related to GDM. Although the focus of much of the literature analyzed in this chapter was not exclusively on Mexican immigrant women with GDM, the included studies highlighted the challenges Hispanic women (including those of Mexican origin) face in adhering to diabetes management, such as language barriers, cultural differences and demands, family constraints, and loss of support systems during immigration. Unfortunately, current GDM management protocols do not consider these contextual forces that could render GDM management goals unattainable for Mexican immigrant women.

The literature clearly reveals that social support is effective in managing stress and mitigating the pathogenic effects of stress, especially when provided in a cultural context. Considering the literary evidence that supports the notion of a lack of social support for Mexican immigrant women with GDM, conceivably, the disparities in GDM control and maternal–fetal outcomes noted among Mexican immigrant women may indeed be strongly related to a lack of social support that impedes their adherence to the GDM management protocols. Hence, conceptualizing social support in the context of Mexican culture may facilitate deep understanding of the perception of social support among Mexican immigrant women with GDM, their process of seeking and receiving social support, and how social support can influence their adherence to the GDM management protocols

CHAPTER 3

METHODS

This chapter describes the study design and the selected data collection and analysis process. Specifically, this chapter discusses the study purpose, theoretical framework, methodology (i.e., constructivist GT), and the rationale for using the GT methodology. Also covered in this chapter are the sample and sampling strategies, data collection and analysis procedures, procedures to protect human subjects, and procedures to ensure trustworthiness of this qualitative study and findings.

Research Purpose and Questions

As indicated in the literature review, the disparity in gestational diabetes mellitus (GDM) outcomes between Mexican immigrant women and their White counterparts is attributable to poor adherence to the GDM management protocols, which in turn may be related to the perceived lack of social support among Mexican immigrant women. According to the research evidence, Hispanic women, including Mexican immigrant women, have identified a lack of social support as a barrier to achieving their GDM management goals (Collier et al., 2011; Hu et al., 2013). Presumably, some of the cultural values, along with the collectivistic nature of Mexican culture may predispose Mexican immigrant women to a lack of social support (Hu et al., 2013; Mansyur et al., 2015), a troubling circumstance in light of the link between social support and health-promoting choices. Multiple studies have demonstrated that social support positively influences adherence to treatment (Affusim & Francis, 2018; Gomes-Villas Boas et al., 2012; Gu et al., 2017; Scheurer et al., 2012). However, no theoretical explication currently addresses how the social support of Mexican immigrant women with GDM influences their adherence to GDM management protocols. Therefore, this study guided the conceptualization of

social support in the context of Mexican culture to understand the social support needs of Mexican immigrant women with GDM and how social support can influence their adherence to the GDM management protocols. To this purpose, the study aimed to answer the following research questions:

RQ1: What is the perception of social support among Mexican immigrant women with GDM within the context of their culture?

RQ2: What are the processes Mexican immigrant women with GDM use to seek and receive social support?

RQ3: How does social support influence adherence to GDM management protocols for Mexican immigrant women with GDM?

Theoretical Framework

Constructing a theory to clarify the relationship between social support and adherence to GDM management protocols in Mexican immigrant women was the study objective. The study framework was based on the philosophical assumptions of the constructivist GT paradigm that reality is constructed by individual experiences, interactions, perceptions, and values (Charmaz, 2014). The theoretical perspectives of this paradigm are rooted in the principles of symbolic interactionism, which guides the understanding of how people make sense of their world (Annells, 1996; Blumer, 1969). These perspectives assume that humans derive meaning from actions and interactions, and that response is mutually dependent on individual interpretations of the interactions and events (Annells, 1996; Blumer, 1969; Charmaz, 2014). Symbolic interactionism guides the understanding of human behavior, social structure, and self-identity through meaning, language, and thought. Hence, self-identity, social roles, expectations, and

perceptions result from the interpretive process in social interactions that constitute symbolic interaction (Blumer, 1969).

The constructivist GT paradigm assumes a relativist ontological view (Charmaz, 2006) which assumes that multiple individual realities exist and that these realities are influenced by different contexts and can change over time (Charmaz, 2014). As such, researchers explore these realities through individual experiences and perspectives. Epistemologically, constructivist GT emphasizes that knowledge is constructed rather than discovered (Charmaz, 2014). Hence, through interactions with participants and under specific research conditions, the researcher collects subjective evidence of the participants' views and experiences. The evidence is then analyzed through an inductive, comparative, and interpretive process to construct knowledge that emanates from participants' views and experiences and the researcher's position, privilege, perspectives, and interactions with participants (Charmaz, 2014). Consequently, the underlying assumption is that the interaction between the researcher and participants produces the data and meanings that the researcher observes and defines.

In contrast to other GT paradigms that discourage conducting a review of the literature before commencing the study, the constructivist paradigm encourages the use of a literature review to develop sensitizing concepts as the foundation for research, while ensuring that information derived from such concepts do not influence data collection and interpretation (Charmaz, 2014). Sensitizing concepts are background ideas that inform the research problem and serve as a starting point for qualitative research (Charmaz, 2006; Padgett, 2004). Although the literature on the explication of social support is abundant, to my knowledge, none expounds on the process of social support of the Mexican immigrant women with GDM with contextual consideration of their culture. In this instance, the sensitizing concepts (that is, the perception of

social support of Mexican immigrant women with GDM within the context of their culture) have guided the direction for inquiry.

By encouraging a literature review, the constructivist GT paradigm provides the impetus for developing sensitizing concepts to guide the understanding of the social experiences, interactions, and interrelations of Mexican immigrant women with GDM and how they derive meaning from their social world. Hence, in this study, the philosophical assumptions of the constructivist GT, informed by the principles of symbolic interactions, underpinned the construction of knowledge through the individual lived experiences, interactions, perceptions, and values (Charmaz, 2014) of Mexican immigrant women with GDM, leading to an explanation of the observed phenomenon through theory development.

Study Design

The study methodology comprises the constructivist GT method, Charmaz's contemporary adaptation of Glaser and Strauss' original GT (Charmaz, 2000). This methodology uses an inductive process of inquiry, with the aim of constructing a theory that is grounded in data that have been systematically collected and rigorously processed and analyzed. The rigorous research procedures lead to the emergence of conceptual categories which facilitate the construction of theoretical knowledge about social behaviors and relationships (Charmaz, 2014; Corbin & Strauss, 2008; Noble & Mitchell, 2016). All GT methodologies aim to develop theories grounded in data to explain the phenomenon of interest, but the philosophical basis of each paradigm of GT methodology varies and each paradigm has explicit criteria for the collection, analysis, and interpretation of data (Tie et al., 2019).

GT Overview

According to Kenny & Fourie (2015), GT was developed by sociologists Glaser and Strauss in 1965. With a goal of bridging the gap between theory and empirical research, they proposed that a combination of theory construction and social research produces a strong and insightful hypothesis grounded in research rather than theories logically deduced from *a priori* assumptions. GT facilitates discovering of the underlying theory that emerges from systematic data analysis rather than test a preconceived theory. Accordingly, Glaser and Strauss devised strict methodological procedures that are exclusive to GT: data collection using unguided interview, iterative data collection and analysis, theoretical sampling, coding, constant comparison, theoretical saturation, and memo writing (Kenny & Fourie, 2015). Glaser and Strauss' GT, known as classic GT, uses a coding process of substantive coding (open and selective coding) and theoretical coding to develop a GT. Hence, as data are collected, coded, and compared, the emerging theory is continually edited and refined based on incoming data, thereby creating a unique interplay between the researcher, the data, and theory development. Other paradigms of the GT method have since been conceived.

According to Nagel et al., (2015), the GT methodology expanded when Glaser and Strauss separated, and Strauss went on to collaborate with Corbin in 1990. Strauss and Corbin developed the positivist model of GT, known as Straussian GT. The researchers questioned the principle of avoiding a literature review prior to starting the study to prevent bias. They emphasized the difference between an open mind and an empty mind, expressing that prior literary knowledge of the study topic is inescapable, as all researchers enter the field of inquiry with some level of exposure to literature. Strauss and Corbin encouraged conducting a literature review prior to data collection and analysis, while maintaining an open mind in analyzing the

data. Additionally, they devised an analytical and prescriptive framework for coding that included the following processes: open coding, axial coding, and selective coding (Strauss & Corbin, 1998). Strauss and Corbin (1998) also emphasized that the Straussian GT was based on pragmatism and symbolic interaction and was designed to systematically deduce, rather than discover theory from data. Later, GT was again refined by a student of Glaser and Strauss, Charmaz (2000), who proposed the constructivist GT paradigm.

Constructivist GT

Charmaz (2006) adopted an ontologically relativist and epistemologically subjectivist perspective that redefined the interaction between the researcher and the participant, coining the researcher as an author and a co-constructor of meaning. Charmaz's (2006) constructivist GT method of inquiry resists traditional GT's concrete, rule-bound, prescriptive approach to coding, arguing that it stifles and suppresses the researcher's creativity. Hence, Charmaz proposed a coding process comprise of initial coding, focused coding, and theoretical coding, while using sensitizing concepts, rather than a complete literature review as the foundation for research (Charmaz, 2014).

According to Charmaz (2014), while other GT methods discourage the use of guided interviews, the constructivist GT method encourages the use of this technique to enable the researcher to gain clarity on the type of information required to answer the research question Furthermore, the constructivist GT paradigm acknowledges the influence and values of the researcher's interaction and creative interpretation of data to construct theoretical knowledge. In contrast, other GT methods recommend that the researcher should remain objective of the data collection and analysis (Charmaz, 2014). As such, because of its focus on human interactions and the level of the researcher's involvement with the data, the constructivist GT methodology is

appropriate in substantive areas in which a dearth of theories exist to explain social processes and human behavior (Foley & Timonen, 2015). This is the case for the topic of social support of Mexican immigrant women within the context of their culture to influence adherence to GDM management protocols.

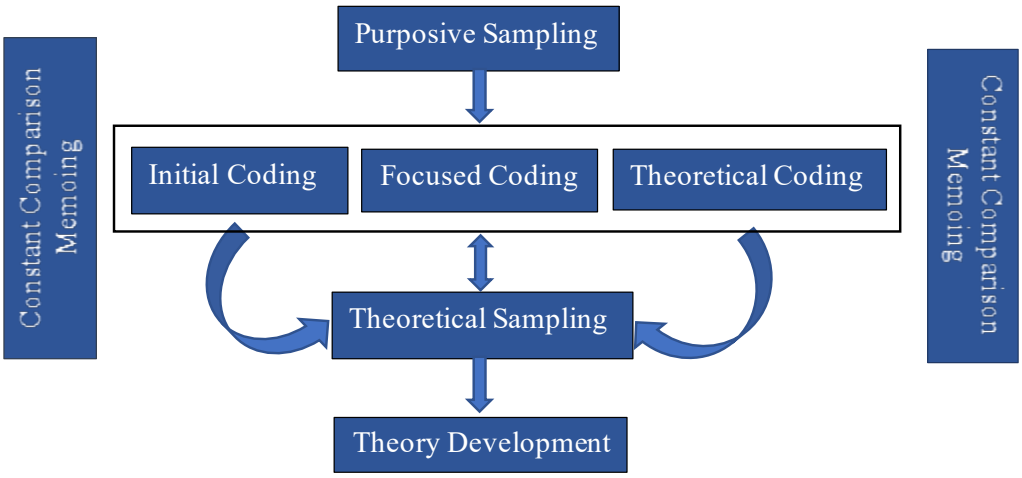
Therefore, the constructivist GT methodology is appropriate for the proposed study for the following reasons:

- It especially focuses on understanding social experiences, interactions, and interrelations between people and provides a deep understanding and explanation of people's behaviors and actions (Charmaz, 2014).
- It offers flexible yet rigorous analytic procedures that reflect and emphasize the significance of the analytic focus of the study (Charmaz, 2006).
- It allows for the exploration of extant concepts (Charmaz, 2006), such as social support and how it influences adherence to GDM management protocols and the construction of a related theory that will resonate with the study population.
- It will facilitate the construction of a new body of knowledge regarding the social processes of Mexican immigrant women with GDM within the context of their culture and how those processes relate to their perception of social support and their adherence to GDM management protocols.

Figure 1 illustrates the analytic procedure of the constructivist GT method

Figure 1

Analytic Procedure of the Constructivist GT Method



Note. The figure shows the constructivist GT analytic process.

Sample and Setting

Sampling was performed in accordance with the constructivist GT methodology. I ensured that the sample size provided a clear picture of the patterns, concepts, categories, properties, and dimensions of the phenomenon (Charmaz, 2014; Willig, 2013). Data collection and analysis were iterative and continued until theoretical saturation was achieved. Purposive sampling comprising recently immigrated Mexican women with GDM who were recruited from a community health center in Southern California provided the initial data for analysis. Purposive sampling is the process of selecting participants from the population that have the most relevance to answering the research questions (Charmaz, 2006), which the target population for this study satisfied. Once data collection and analysis started, theoretical sampling was used to develop theoretical categories by sampling new participants to pursue clues that identified, clarified, and

tested the emerging theory. Hence, through an iterative process of comparative analysis, theoretical sampling provided further information to saturate the developing categories as recommended by Charmaz (2006).

Participants were recruited from the gestational diabetes clinic of a community health center located in the desert region of Southern California. This community health center predominantly serves an ethnic minority and low socioeconomic community. The combination of physicians, advanced practice nurses, social service personnel, and educators at the health center provide family health-care services to the community, including women's health and obstetrical care services. Specialty care clinics, such as the gestational diabetes clinic, operate within the community health-care center. The gestational diabetes clinic provides diabetes education, GDM management and follow-up, and fetal surveillance services to GDM patients. The health center operates 5 days a week and provides care to approximately 60–75 patients daily, while the gestational diabetes clinic serves approximately 15–20 patients a day. Approximately 50% of the patients receiving services at the health center are of Mexican origin. In this study, I partnered with and employed the assistance of the medical director and the staff at the gestational diabetes clinic to develop the study protocol and obtain Institutional Review Board (IRB) approval.

Inclusion Criteria. Mexican immigrant women, currently diagnosed with GDM, and recently immigrated to the United States within the past 10 years were eligible to participate in the study. The rationale for only selecting participants who had immigrated within the past 10 years was based on related literature indicating that ten years is the timeframe in which changes related to acculturation occur in most immigrants (Booth et al., 2013; Dahlan et al., 2019; Frank et al., 2014; Kim & Kim, 2013; De Maio, 2010; Sandstrom & Gelatt, 2017; Vissandjee et al.,

2004; Yarnell et al., 2017). Additional inclusion criteria were being 28–36 weeks pregnant, currently receiving prenatal care, and on the GDM management protocol (carbohydrate-restricted diet, regular exercise and weight management, blood-glucose self-monitoring, frequent diabetes education/counseling visits, and frequent clinic visits as previously described). All participants were over 18 years of age and spoke and understood English.

Exclusion Criteria. Women under 18 years of age were excluded from participating in the study in consideration of their vulnerability. Also, women who had pregestational (type 1 or type 2) diabetes or other comorbidities as indicated by their medical history were excluded from the study. Considering that women with pregestational diabetes and other comorbidities have had a longer period of adjustment to their diagnoses, their perception of social support might have differed from that of women who were newly diagnosed with diabetes (Leung Hui et al., 2014; Surucu et al., 2018) with the added stress of pregnancy.

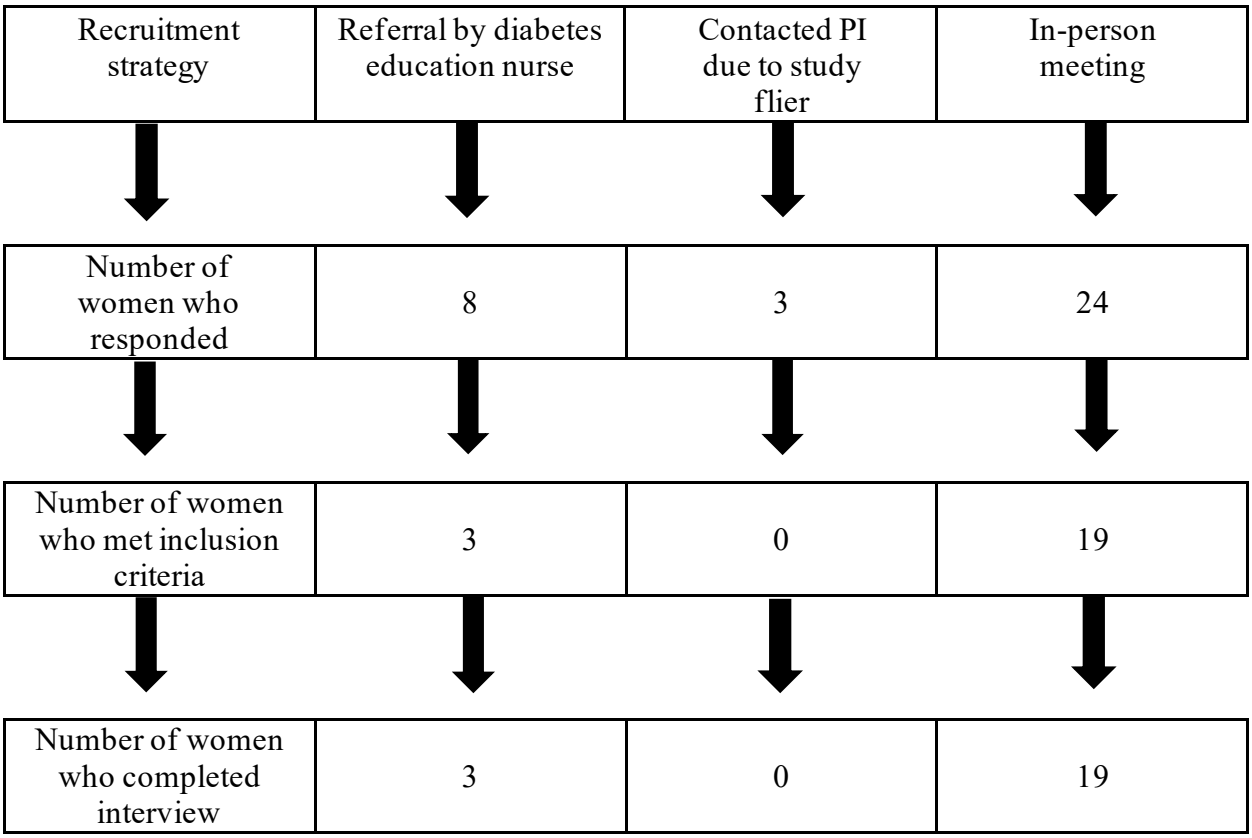
Sample Recruitment Strategies. Before commencing the study, I apprised the director of the gestational diabetes clinic of the study purpose and procedures and sought permission to recruit participants. I also sought approval to conduct the study from the University of Nevada, Las Vegas (UNLV) IRB. Upon IRB approval, the approved study protocol (IRB Approval #1652856-3) and approval documents were presented to the director of the community health center. Participants were recruited from the clinic through word-of-mouth from the diabetes education nurse and fliers that were strategically placed in the waiting room and examination rooms. I was also present at the gestational diabetes clinic 2–3 days a week to recruit participants. In my absence, women who were interested in participating in the study were advised to call me directly using the phone number on the flier. Women who met the inclusion criteria and agreed to participate in the study were scheduled to meet with me at the clinic. At the

meeting, I provided detailed verbal and written information to the participants regarding the study purpose, the participants' role, the study protocol, and the risks and benefits of participating. I answered all of the participants' questions before they signed the written consent. The written informed consent that the participants signed specified their willingness to participate in a face-to-face interview and their permission for the interview to be audio-recorded (Appendix A).

Thirty-five Mexican immigrant women with GDM showed interest in participating in the study, of which 22 women met the inclusion criteria, and gave consent and were interviewed for this study. All participants were recruited from the same site, the gestational diabetes clinic mentioned earlier. Eight women expressed interest in participating in the study during their diabetes education sessions and were referred to me by the diabetes education nurse. Five of these women did not meet the inclusion criteria, but three of them did and subsequently participated in the study. Three other women contacted me through the information on the fliers that were strategically placed in the gestational diabetes clinic. However, none of these women met the inclusion criteria; therefore, they did not participate in the study. During in-person recruitment sessions with me, 24 women expressed interest in participating in the study. However, only 19 of them met inclusion criteria and participated in the study, and five women did not meet inclusion criteria. Figure 2 illustrates the sources of recruitment and the number of participants. Participants were assured of the confidentiality of the study process. Maintaining anonymity was accomplished by assigning each participant a pseudonym that they picked out of a hat.

Figure 2

Sources of Recruitment and Number of Participants



Note. The numbers illustrate the quantity of participants from the different recruitment sources.

Data Collection Method and Procedure

For this study, I conducted face-to-face interviews with a focus on encouraging the participants to speak freely on the study topic while using semi-structured questions (Appendix B) that I developed as a guide, and asking probing questions based on emerging knowledge. Semi-structured questions are preset, open-ended questions designed to keep the interview focused on answering the research questions while systematically and comprehensively exploring participants' personal experiences, perceptions, and beliefs related to the study topic

(Dejonckheere & Vaughn, 2019; Jamshed, 2014). An example of a semi-structured question asked in this study is: "Will you please share your experience with having GDM?" An example of a follow-up probing question used in this study is: "You mentioned being stressed, will you please tell me more about being stressed?"

In compliance with COVID-19 restrictions, the interview space was a designated conference room at the facility that was private, quiet, free of distractions, and having enough space to maintain 6 feet of distance between the participant and me. Both the participant and I wore masks throughout the interview session. The surfaces were disinfected after each interview per the facility's COVID -19 protocol. Each interview lasted approximately 60 minutes. The interviews were digitally audio-recorded and transcribed verbatim by a certified transcriber. I also took field notes during the interviews to memorialize subtle occurrences that I noted in the interview. Data collection and analysis were iterative. This means that I analyzed the data immediately after collection and before collecting further data, moving back and forth between data collection and analysis. This iterative process continued through theoretical sampling and theoretical saturation. Follow-up interviews were conducted with agreeable participants to perform member checking and verify that the emerged categories represent their lived experiences.

Of the 22 Mexican immigrant women with GDM who participated in the study, nine took part in the follow-up member-checking interview. The follow-up interviews were conducted face-to-face at the participants' clinic visit and lasted approximately 10 minutes. In these follow-up interviews, I reviewed the conceptual categories and core category with the participants along with corresponding excerpts, receiving a unanimously positive response that the conceptual propositions represented their lived experiences. As a token of appreciation, participants were

given a $25 Target gift card upon completion of the interview and an additional $10 gift card if they participated in member checking.

Data Analysis Procedures. Data collection and analysis comprised an iterative and inductive process. The audio-recorded interviews were transcribed verbatim, and the transcription reviewed immediately after the transcripts were received. Though I notated initial thoughts and pertinent non-verbal behaviors and intonations observed during the interviews in the form of field notes, transcribing the audio recording and reviewing the transcript immediately preserved my memory of the subtleties in the interview and encouraged complete immersion in the data. In the process, I listened to the audio-recorded interviews multiple times while reading the transcript to identify potential errors in transcription and corrected such errors as indicated. Concurrent data collection and analysis were conducted, which involved the coding processes recommended by Charmaz (2014): initial, focused, and theoretical coding. The interview transcripts were arranged into columns. The first column comprised the participant narratives, while other columns were for the initial, focused, and theoretical coding.

Constant comparative method is an inductive analytic process of coding used in GT (Charmaz, 2014). It involves comparing data to data, data to code, code to code, code to categories, and categories to categories (Charmaz, 2014). This process helps to uncover differences and consistencies in the data, codes, and categories, resulting in more abstract concepts and theories (Charmaz, 2014). Similarly, Memo writing is a process in GT that encourages the researcher to document thoughts, feelings, and reflective, intuitive ruminations during the analytic process (Charmaz, 2014). Essentially, memo writing provides justification for emerging codes and categories and creates an audit trail of the analytic process. In this study, the

constant comparative method and memo writing were implemented through the three levels of coding as Charmaz (2014) recommended, to ensure that all data perspectives were explored.

The first level of coding, initial coding, involved line-by-line coding of each transcript using coding by gerunds and in vivo coding (Charmaz, 2006; Charmaz, 2014). Gerunds are nouns derived from verbs and are similar to the verb's present participle (Merriam-Webster, n.d.), for example, running. Coding by gerunds is a coding process in GT that preserves the actions in the data and eliminates the risk of the researcher subconsciously importing existing theory into data analysis (Charmaz, 2006; Willig, 2013). In comparison, in vivo coding allows the researcher to use the participant's own spoken words thereby honoring participants' voices and accurately indicating their intent and meaning (Charmaz, 2006). For this study, I read the transcript multiple times to facilitate familiarity with and understanding of the contents of the interview while writing reflective notes (memos) regarding meanings derived from the data and the relationship between concepts (Charmaz, 2006; Daher et al., 2017).

The second level of coding, focused coding, involved synthesizing the initial codes into analytic categories as Charmaz (2014) described. In this process, I identified from the initial codes the most frequent and significant codes to filter through the data (by comparing data to data and data to code) to identify the most analytic way to categorize the data. Focused coding of the initial codes revealed some conceptual categories that guided theoretical sampling. For instance, some participants struggled with their family members, especially their mothers and grandmothers offering them GDM-noncompliant foods out of the innate cultural characteristic of feeding to nurture rather than malicious intent. In the interviews, I posed some probing questions to these participants to elucidate the conceptual category *navigating cultural norms and values.* Hence, the focused codes were more conceptual and advanced the theoretical direction of the

study, following Charmaz's (2014) example. Subsequently, codes were compared to codes to upgrade them to categories and move them to the next level of coding.

The third level of coding, theoretical coding, involved identifying the links between categories to generate the core category. Theoretical sampling continued until theoretical saturation was achieved, meaning that the categories were adequately explained, and new data analysis did not provide further theoretical knowledge. Throughout the process of data collection and analysis, I continued following the constant comparative method and memo writing to illuminate subtle meanings and maintain a written record of the theory development process as Charmaz (2014) described.

In summary, during the iterative data collection and coding process, emerging concepts guided theoretical sampling. Emerging conceptual categories were further clarified in subsequent interviews by augmenting the semi-structured questions to be more probing. Theoretical sampling continued until theoretical saturation was achieved at 22 interviews. Through theoretical coding, constant comparative analysis, memo writing, and diagramming to visualize the emergence of the core category, the concept of *Achieving Equipoise* was revealed as the core category that linked the other conceptual categories and illustrated the social support process of Mexican immigrant women with GDM with conceptual consideration of their culture. Notably, as a novice GT , I sought the expert guidance of the dissertation chair and co-chair throughout the study process.

Procedures to Protect Human Subjects. Prior to starting the study, I obtained approval from the institutional review board (IRB) of the University of Nevada, Las Vegas as well as the community health center and gestational diabetes clinic from which participants were recruited. Informed consent was obtained from participants after verbal and written information was

provided to them, their questions answered, and they were assured of confidentiality. The interviews were conducted in a designated private conference room to ensure confidentiality and protect participants, and COVID-19 precautions were strictly maintained. All names were changed to pseudonyms, and other personal identifiers were de-identified and anonymized. The digital interview data were encrypted and password-protected, along with other study data. All data will be securely stored for 3 years after the study. Though participating in the study posed minimal risk to the participants, they were informed of their right to withdraw from the study at any time or temporarily pause the interview without consequence. While there was a minor risk of discomfort in talking about sensitive issues, no participant withdrew or requested to pause the interview. In fact, some participants expressed a state of catharsis in talking about their lived experiences.

Procedures to Ensure Trustworthiness. The constructivist GT procedures that were used for the study were designed to ensure rigor and trustworthiness. For example, theoretical sampling ensures rigor and trustworthiness because the process establishes that no new knowledge can be ascertained from further data collection, while the iterative data collection and analysis process keeps the researcher immersed in the data and ensures that the researcher does not miss any analytic opportunities. Additionally, the semi-structured questions that guided the study were designed to probe and explore the participants' lived experiences. As Charmaz (2014) urged, I practiced reflexivity in my interactions with the study participants. As such, I performed self-reflection on the personal ideologies, beliefs, judgments, and practices that frame my perspectives while being aware of the perspectives of the participants. This process is reflected in the memos written during data analysis.

Furthermore, Lincoln and Guba's (1985) and Charmaz's (2014) proposed criteria for establishing trustworthiness were applied to demonstrate trustworthiness. Lincoln and Guba proposed that the researcher must meet the following criteria: credibility, transferability, dependability, and confirmability. In this study, credibility was established through prolonged engagement and persistent observation of study subjects and through debriefing with my dissertation chair and co-chair, as well as member checking following the recommendations of Lincoln & Guba (1985). Transferability is the applicability of the study findings to other contexts, which I facilitated by providing an in-depth description that will enhance the reader's judgment of transferability (Lincoln & Guba, 1985). To achieve dependability, I have provided a clear, logical, and traceable documentation of the research process; that is, justification of the research method and decisions for analyzing and interpreting the research data. Confirmability was achieved through the development of an audit trail of this research process (Lincon & Guba, 1985). By systematically documenting details of the research process (methodology, data collection, analysis, and interpretation), other researchers or reviewers can determine the trustworthiness of this study.

The study findings were also evaluated using the four criteria for evaluating trustworthiness proposed by Charmaz (2014): credibility, originality, resonance, and usefulness. Charmaz described credibility as the indication that the research was conducted appropriately, and the results are believable. The author went on to define originality as the indication that the research offered new insights to the identified problem. Meanwhile, resonance indicates that the study result represents the experiences of the participants and provides insight into the experiences of others, while usefulness denotes that the study contributes new knowledge that guides policy, practice, and future research. This study's credibility was established by

demonstrating an intimate familiarity with the study focus and context and following a meritorious and transparent data collection and analysis process. Originality was substantiated through my practice of reflexivity in the data collection and analysis by writing field notes and memos and by showing that the study facilitated the development of new insight about the phenomenon being studied. Likewise, resonance was established by Member checking. Lastly, showing the useful knowledge that the study contributes to the field of study indicates usefulness.

Chapter Summary

The constructivist GT method rooted in the principles of symbolic interactionism was used to construct a theory to explicate the processes that facilitate social support of Mexican immigrant women with GDM within the context of their culture and how social support influences their adherence to the GDM management protocols. Data collection was accomplished via face-to-face, private, individual interviews guided by semi-structured questions. Iterative data collection and analysis until theoretical saturation was achieved was conducted to heighten the analytic process and enhance the emergence of conceptual categories and theoretical knowledge. While adhering to the systematic and rigorous data collection and analysis process, I remained flexible, embraced ambiguity, and was cognizant of emerging categories and theoretical knowledge, following the GT procedure according to Charmaz, (2014). The entire research process, including data collection and analysis, was designed to ensure rigor and trustworthiness of the derived theoretical knowledge and protect the human subjects.

CHAPTER 4

STUDY RESULTS

This chapter presents the demographic and qualitative findings of the GT study. The GT that emerged from the analysis was the process of *Achieving Equipoise,* which explicates the social support process of Mexican immigrant women with Gestational Diabetes Mellitus (GDM). The process of *Achieving Equipoise* answers the following research questions of the study:

RQ1: What is the perception of social support among Mexican immigrant women with GDM within the context of their culture?

RQ2: What are the processes Mexican immigrant women with GDM use to seek and receive social support?

RQ3: How does social support influence adherence to GDM management protocols for Mexican immigrant women with GDM?

Demographic Findings

Twenty-two Mexican immigrant women with GDM were interviewed for the study. The average age of participants was 32.45 years with their ages ranging from 20 to 39 years. The average gestational age of the participants was 33.7 weeks, with their gestational ages ranging from 28 to 36 weeks gestation. Also, participants had lived in the United States for an average of 8.9 years with a range between 5 to 10 years ago (Table 1). All the participants spoke and understood English. They were receiving regular prenatal care at the community center, were on the GDM management protocol, and were receiving regular follow up for GDM and to monitor their baby. The women all lived with their significant others and, in a few instances, their parents or parents-in-law. The participants who did not live with their parents or parents-in-law lived in close proximity of some type of extended family. The parents of two participants lived in Mexico

but are able to visit the United States. However, they had not visited in over a year due to the pandemic. To protect the personal information of participants, all names used in this document are pseudonyms picked randomly by participants from a collection of names.

Table 1

Participant Demographic Data

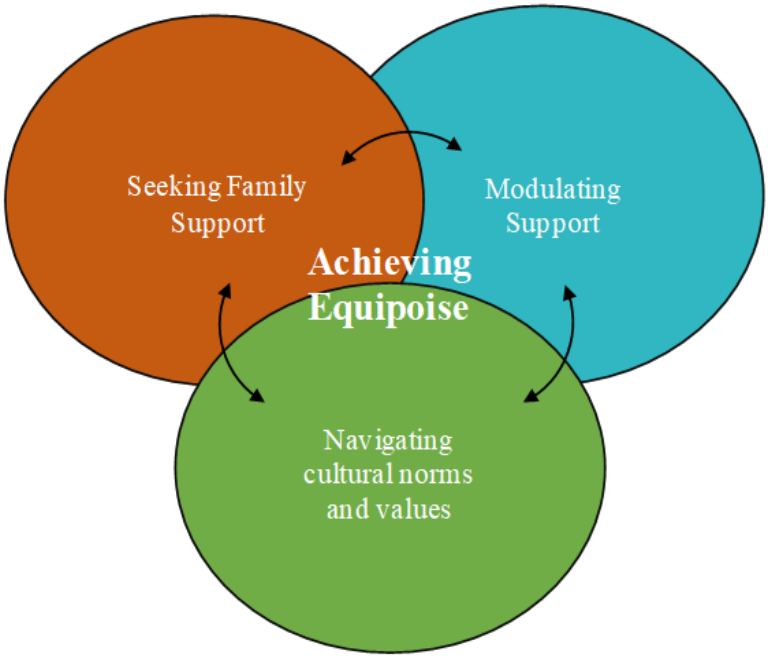
Women's Pseudonym	Age	Gestational Age	Residency in the U.S.
1. Cassie	27 years	29 weeks	10 years
2. Maria	32 years	28 weeks	9 years
3. Maggie	29 years	35 weeks	9 years
4. Amy	31 years	36 weeks	10 years
5. Peggy	39 years	36 weeks	5 years
6. Julia	37 years	36 weeks	9 years
7. Cynthia	31 years	35 weeks	8 years
8. Jane	30 years	33 weeks	6 years
9. Alex	36 years	36 weeks	10 years
10. Imelda	36 years	30 weeks	10 years
11. Stefanie	20 years	36 weeks	10 years
12. Betty	36 years	33 weeks	9 years
13. Lindsey	36 years	36 weeks	8 years
14. Kelly	28 years	34 weeks	10 years
15. Kim	32 years	35 weeks	10 years
16. Angel	34 years	35 weeks	9 years
17. Tammy	31 years	34 weeks	10 years
18. Selma	30 years	33 weeks	8 years
19. Daisy	36 years	33 weeks	10 years
20. Irma	37 years	35 weeks	10 years
21. Diana	34 years	30 weeks	9 years
22. Abigail	32 years	35 weeks	8 years

Overview of the GT

This constructivist GT study aimed to explore the perception of social support among Mexican immigrant women with GDM and construct a theory of the processes that facilitate social support in Mexican immigrant women with GDM within the context of their culture. Additionally, the study aimed to discern how social support can influence these women's adherence to the GDM management protocol. The core category of *Achieving Equipoise* emerged from the iterative data collection and analysis and the inductive process of the constructivist GT method. The dictionary definition of equipoise is a state of equilibrium (Merriam-Webster, n.d.) The theoretical concept of *Achieving Equipoise* in this study expounds the Mexican immigrant women's process of achieving equilibrium in social support. This equilibrium was obtained by balancing their social support resources within the boundaries of their cultural norms and values, to satisfy their need for social support in implementing and adhere to the GDM management protocol. There were three main categories of *Achieving Equipoise*: *seeking family support*, *modulating support*, and *navigating cultural norms and values*. The process of *Achieving Equipoise* was not linear; there was a constant interplay between and within the categories to influence the women's perception of social support and facilitate *Achieving Equipoise* in social support. *Achieving Equipoise* consequently influenced adherence to the GDM management protocol (Figure 3).

Figure 3

The Theory of Achieving Equipoise



The theoretical concept of *Achieving Equipoise* elucidates the women's perception of social support and their balancing and counterbalancing efforts of seeking, accessing, and utilizing social support to assist them with implementing and adhering to the GDM management protocol. *Achieving Equipoise* is based on the competing desires of soliciting the support of family to implement and adhere to the GDM management protocol and honor their Mexican cultural norms and values. A key aspect of *Achieving Equipoise* was the women's strong desire to protect their unborn baby from the complications of GDM and minimize their and their offspring's risks of developing type two diabetes in the future by implementing and adhering to the GDM management protocol. One of the participants, Lindsey expressed her motivation for implementing the GDM management protocol: "I can't, I can't put her through, I can't put my

baby through this. So that was like my number one motivation". In another example of the women's motivation to keep their baby safe and healthy, participant Kim would often ask her family to go walking with her as a form of exercise, according to the GDM management protocol. Explaining why it was important to her that her family went walking with her, Kim stated: "Yeah, so I can be a little motivated so I can do - you know, what I have to do to keep the baby safe". Though she was concerned for her baby's health, Cynthia's motivation was mostly her post-delivery health. She was afraid of continuing to have diabetes after having her baby. Cynthia expressed: "I wanna be able to manage still, uh, I think my main concern is I don't wanna have diabetes after the baby".

The other aspect of *Achieving Equipoise* was the multiple barriers that affected the women's implementation of and adherence to the GDM management protocols, despite their desire and motivation. The main barrier was the women's culture, which manifested in terms of food, relationships, and cultural values. The women struggled with implementing the diet modification aspect of the GDM management protocol because most of the traditional Mexican foods that they ate with their families are discouraged in the GDM management protocol. Hence, the women had the option to modify the traditional Mexican foods to meet the recommendation of the GDM management protocol, which was often a point of contention with their families or eat the traditional Mexican foods with their families and risk GDM complications. Moreover, when the women tried to modify their traditional foods, they did not have the resources to purchase healthy food options.

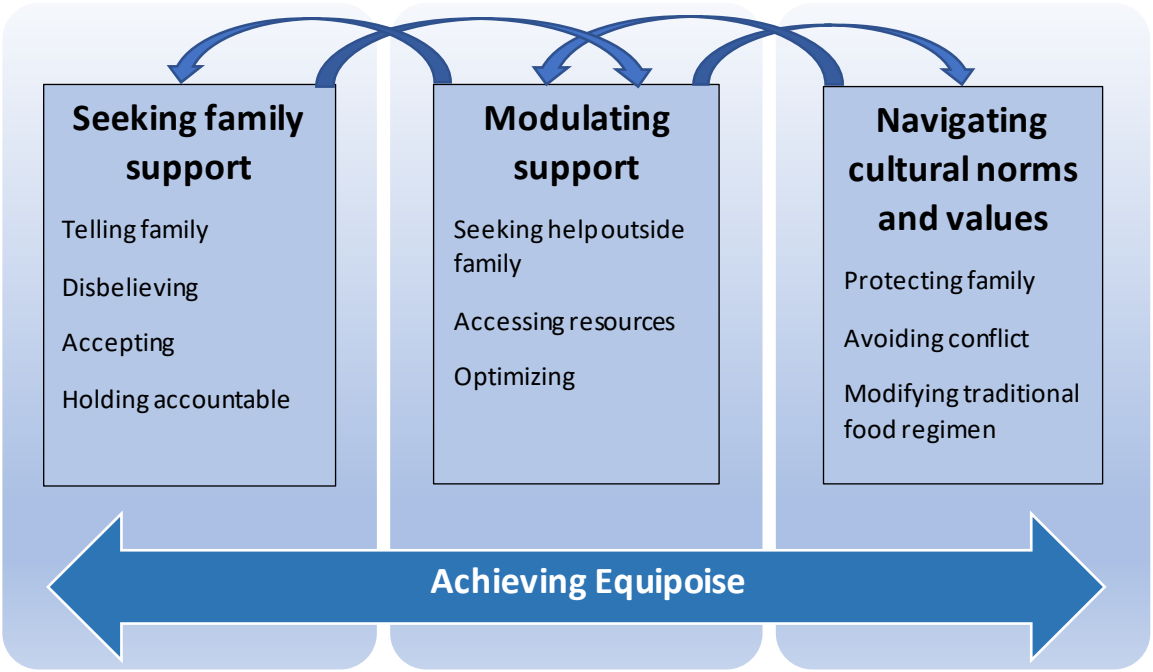
In some instances, family members disbelieved or trivialized the women's GDM diagnosis. Some family members expressed distrust for western medicine and encouraged the women to use folklore to manage their diabetes. Several of the women talked about family

members offering them discouraged foods. They also discussed their difficulties with socializing with family and being derided for trying to follow the GDM management protocol. Hence, they chose to ignore the GDM management protocol at family gatherings, isolate themselves, or acquiesce in the family's opinions to avoid conflict. Though there were few variations in the women's lived experiences, significant similarities were evident. The GT of *Achieving Equipoise* is comprised of three categories: *seeking family support*, *modulating support*, and *navigating cultural norms and values*, while each category is also comprised of subcategories. For example, the category of *seeking family support* is comprised of the following subcategories: telling the family, *disbelieving, accepting,* and *holding accountable*. In the *modulating support* category, the subcategories are *seeking help outside the family, accessing resources*, and *optimizing*. Similarly, the category of *navigating cultural norms and values* is comprised of the following categories: *protecting family, avoiding conflict,* and *modifying traditional food regimen.* *Achieving Equipoise* in social support consequently facilitated the women's adherence to the GDM management protocol.

Figure 4 depicts the GT of *Achieving Equipoise.* The double-headed arrow depicts *Achieving Equipoise* as a process that is encompassed by the three categories. Meaning that the women could not achieve equipoise in social support without going through the process of *seeking family support, modulating support,* and *navigating cultural norms and values*. The arrows connecting each category indicate that negotiating the processes is not linear, rather an iterative process. Thus the women vacillated between the three categories (*seeking family support, modulating support,* and *navigating cultural norms and values*) to achieve equipoise in social support.

Figure 4

The Processes Comprising the Grounded Theory of Achieving Equipoise.



Description of the Categories of *Achieving Equipoise*

Category 1: Seeking Family Support

In the first category of *Achieving Equipoise*, in alignment with their collectivistic culture, the women immediately sought support from their families. They had just been diagnosed with GDM and regardless of a previous history of GDM or a family history of diabetes, most of the women were shocked, scared, and disbelieved their diagnosis. They expressed feeling a sense of panic, worry, and fear over the potential impact of GDM on the health of their baby and the risk of future development of type 2 diabetes. Many of the women have family members who have type 2 diabetes and have witnessed their struggle with the disease, which elevated their worry for

themselves and their offspring. Maggie expressed that she panicked when she was given the diagnosis of GDM:

> I thought, if I have diabetes, wouldn't the baby have diabetes? Or she could be born with it, or what if I'm doing, like, something bad and something happens to her? Or maybe she grows, like she gains a lot of weight? Yeah, I panicked.

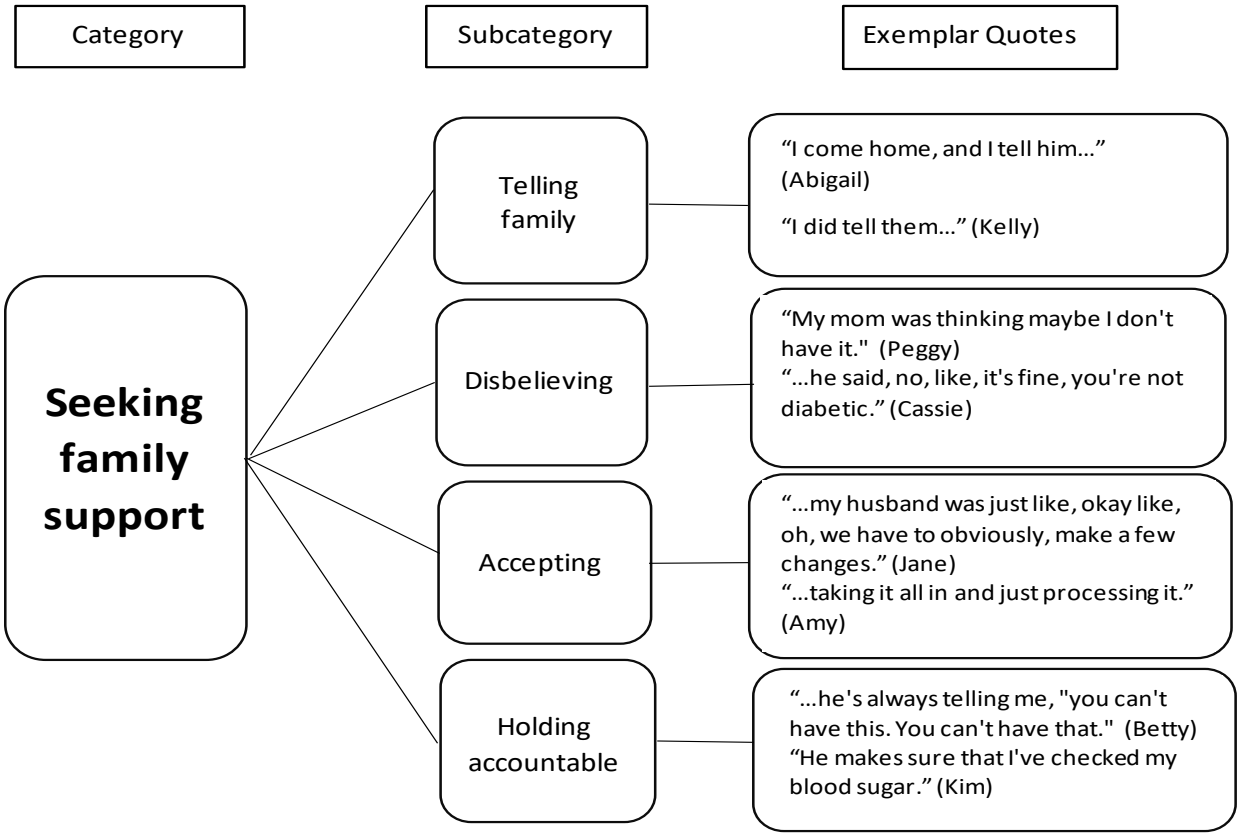
Daisy expressed fear that she would have diabetes for the rest of her life, like her mother.

> I felt scared. I was, it was kind of scary to find out that I had diabetes. 'Cause my mom is diabetic- and my dad is, too. So, I'd see them for like, for 20 years, like, pinching her fingers and I mean, my mom struggles. I should know she's older, but I mean, she's been able to manage this long. I guess I was kind of scared. It's scary when I, you know, because I thought it was gonna be me for the rest of my life just like my mom.

The women understood the importance of the support of their family in implementing and adhering to the GDM management protocol. Hence, they started the process of seeking family support. The subcategories for seeking family support are *telling the family*, *disbelieving*, *accepting*, and *holding accountable*. Figure 5 illustrates *seeking family support* and the subcategories.

Figure 5

Seeking Family Support with Subcategories and Exemplar Quotes



Subcategory1a: Telling the Family. Telling the family marks the beginning of the process of *Achieving Equipoise*. It describes the process of the women telling their families that they were diagnosed with GDM, an indirect way of seeking support from their families. Once the women received the diagnosis, their natural instinct was to tell their family members about their diagnosis. Participant Abigail stated: "I told my fiancé. He did not believe me at first". Participant Kim expressed the same experience, stating: "I told my husband. He didn't believe

me at first". They told their husbands or significant others first. Hierarchically, in Mexican culture, the husband is the head of the family and decision maker. Moreover, if they were to be successful with modifying their diet, they needed the support of their husbands or significant others. Hence, it made sense that they would tell their husbands or significant others first. Once they have discussed with their husbands, depending on the age of their children they tell their children and then they tell the rest of their family members such as parents, parents in-law, and siblings. Telling the family initiated family support in some cases and in most cases was met with disbelief.

Subcategory1b: Disbelieving. Commonly, when the women told their family members about their diagnosis, they went through an initial process of *disbelieving* the GDM diagnosis. Even when the women had GDM in previous pregnancies or have family history of diabetes, the family still disbelieved the diagnosis. Participant Peggy's mother did not believe that she has GDM. Peggy described her mom's response: " My mom, said "why do you have diabetes? In, the family there is no diabetes. My mom was thinking maybe I don't have diabetes." The response Angel encountered was similar when she told her father that she had been diagnosed with GDM. She expressed that her father had doubts about the diagnosis because this type of diabetes happens only during pregnancy:

> My dad never really believed like that there's certain things that can be wrong because it's like, "How is it that you can have gestational diabetes but then when you give birth then it goes away?" So, he thinks it's just I guess, made up (Angel)

In some instances, though the family believed the women's GDM diagnosis, they trivialized GDM, thus encouraged the women to stray from the recommendations of the GDM management protocol. This encouraged the women to succumb to food temptations and

disregard the clinical recommendations. For example, participant Julia's husband constantly discouraged her from eating according to the recommendations of the GDM management protocol, telling her: "Oh don't worry it's gonna go away. It's just during the pregnancy." Selma also felt that her family was not supportive of her following the GDM management protocol. She stated: "They're not really, sensitive to the fact that I do have it, you know. They're just, like, again, "Its, only a couple weeks away, you'll be fine afterwards. You don't have to worry about it."

The attitude was similar with Stefanie's family. She said family members told her that: "Its normal for pregnant women, not every pregnant woman, but some women get it. And it just happens." Julia's grandmother insisted that the GDM compliant foods she ate was not enough for the baby. She told Julia: "Oh but you're pregnant, eat this - go have another bread. You have to eat double because it's not just you, it's the baby". Although the family's efforts were benevolent, as a result of disbelieving or trivializing the GDM diagnosis, the support they provided to the women was not the required or desired type of support. Kelly tried to make sense of why her family would disbelieve or trivialize the GDM diagnosis and not take her needs seriously. She suggested that it was probably because the family could not see the effect of GDM. She said: "…because if let's say you had a broken leg, right? They can see your pain and they would be able to help better. But this they don't see the effect."

Though the women believed the diagnosis when they were initially told by their health care providers, they vacillated to disbelieving the diagnosis because of their family's disbelief. In many instances, disbelieving prevented the women from implementing the GDM management protocol.

Subcategory1c: Accepting. As the women return to the clinic, they became aware of their persistently abnormal blood glucose levels and learned more about the possible sequelae of GDM from their diabetes education nurse and health care provider. This encouraged them to transition to the subcategory of *accepting* to begin the process of accepting their diagnosis. Participant Amy stated that she had to be "open-minded about it. You know, taking it all in and just processing it". The women then went back home to their families and discussed their encounter with the diabetes education nurse and health care provider. They informed their families of what they learned about their blood glucose levels and how it can affect their unborn baby. The realization of the impact of GDM also encouraged their family's transition to the *accepting* subcategory.

Participant Abigail went back to her husband with the information she received from the diabetes education nurse and convinced him that her GDM diagnosis was real. She said, "I come home and I tell him, you know, what we discussed and then, I mean, we got set up with the program." Participant Kelly also helped her family accept her GDM diagnosis by informing them of what she learned from the diabetes education nurse. Kelly stated: "I did tell them how scary it is and like what can happen if I don't get it under control." In most cases, the women were successful in helping their family transition to the accepting subcategory.

Subcategory1d: Holding Accountable. In this subcategory, the family has accepted the women's diagnosis and take on the role of making sure that the women implement and adhere to the GDM management protocol. Hence, the family frequently checked on the women, making sure that they made healthy food choices, self-checked their blood glucose level, and exercised as recommended by the GDM management protocol. Amy's children would often hold her accountable on the foods she ate. She recalled, "They're my little investigators. Which is good,

I'm glad. Because that also keep me like, okay, yeah, I mean, you can't have a burger and then say, oh, I only had an apple." Kim's grandmother and mother also watched out for her, making sure that she stayed on course with the GDM management protocol. Kim recalled both her mom and grandmother holding her accountable:

> Yeah. My grandma always knows, like when I tell her Oh, I want this, like, that sweet, she'll tell me no, because she knows that I have the diabetes. My mother, too. She is always telling me "Are you checking your sugars? Are you taking care of yourself?" So yeah, they- they know and they're supportive and they make sure I'm doing what I have to do.

Kim also stated about her husband, "Now he makes sure that I've checked my blood sugar two hours after, cause sometimes I forget. So, he makes sure that I do it and that I write down what I have eaten." Likewise, in Betty's household, her husband was vigilant about the foods she ate, recommending healthier options to her. Betty stated, He's always telling me, "You can't have this. You can't have that." Or, you know, like, he tries to tell me, "Just eat some carrots or something."

When asked during the interview, the women did not seem to be bothered by being held accountable by their family members. In fact, they viewed *holding accountable* as evidence that their family members cared for them and their baby's well-being. When asked what support meant to her, Kim stated: "when someone checks on me or checks on my kids - yeah that's what I mean as support. That's what support means to me." However, several of the women expressed that being held accountable was not particularly the type of support they wanted or needed to help them adhere to the GDM management protocol. They desired 1) their families to eat the modified diets with them, 2) to have healthy food options available to them at family gatherings,

3) resources for healthy food options, 4) information about managing making their traditional foods GDM compliant, and 5) support for exercising. Therefore, they attempted to modulate support as in category 2.

Category 2: Modulating Support.

In this category, the women understood the significance of social support for adhering to the GDM management protocol but realized that the family may not be a reliable source for the support they need. Though the women and most of their families had accepted the GDM diagnosis and the family had transitioned to showing their support by holding the women accountable, the women required more support than being held accountable. They wanted the family's support with diet modification and exercising. Instead, their husbands and children rejected the women's attempt to modify their traditional Mexican diet to comply with the GDM management recommendations. They demanded to eat the regular Mexican foods which are usually unhealthy food choices. The women expressed being tempted to eat the unhealthy food choices because they are obligated to cook those foods for their family. Furthermore, the family members ate those foods in their presence. Additionally, extended family members consistently offered foods that were not GDM compliant to the women. For example, while Selma's family discouraged her from eating poorly, they ate the unhealthy food choices in her presence. She described her experience with her family:

> Like, everyone's like, "Yeah, you know, you can't eat sugar," but then they eat it in front of me. I've told them that it's hard. It's stressful. And, um, it's hard to see them eat specific things. And they're like, "Yeah, I can understand that" but then they continue to do the same thing.

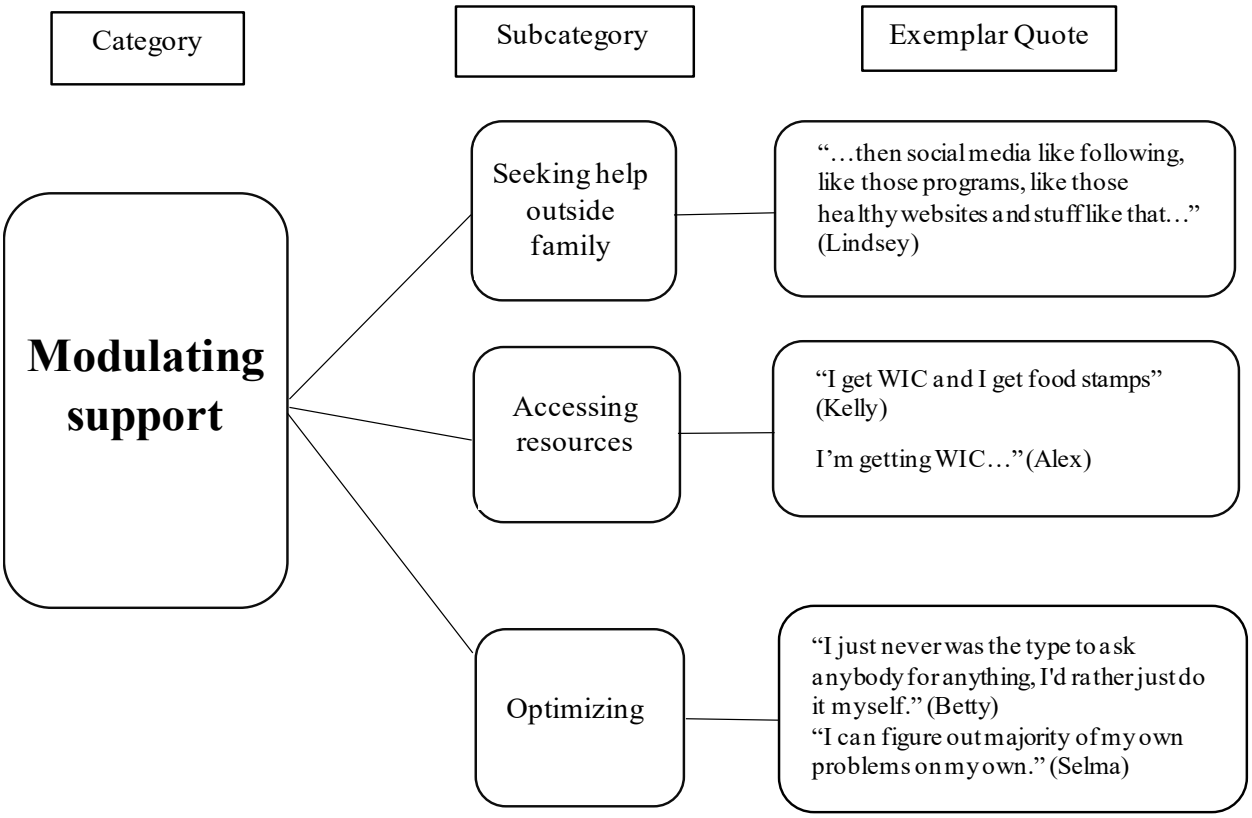
Rather than supporting his wife by implementing the diet recommendations for himself, Selma's husband told her "Since you're pregnant, I'm pregnant, and I'm gonna eat what I want." Kelly also expressed her frustration with her boyfriend, "…he kind of eats whatever he wants and it kind of makes me just want to eat what he eats. So, if he would be a little more supportive."

Some of the women considered cooking the regular traditional foods for their family and healthier options recommended for their GDM management for themselves. However, they did not have the financial resources to purchase the healthy food options for themselves and the usual foods their family. Kelly stated, "Yeah. I try to buy foods that I can eat, but it's really hard when everybody else in the house has to eat too. So, I need to buy foods that they will eat." Selma stated, regarding buying healthier food options, "And, when you go to the grocery store, you see the price difference, and you're like, I can't get this oil, or if I do, it's gonna, put me out of budget." Hence, they buy the regular traditional foods for the family.

While it might have been helpful for the women to apprise the family of the type of support they needed or demand that their family support them, it is culturally deemed a burden, and inconsiderate to ask the support system for help or inconvenience others. Additionally, Mexican women are supposed to maintain harmony in the family, not create disruption. Therefore, the women accepted the support offered by the family and augmented the support by seeking support elsewhere. As such, considering the struggles of their support system by not making them their sole source of support. For example, when asked why she did not apprise the family of the type of support she needed, Alex stated, "Cause everybody has their own life already." The subcategories for *modulating support* are the following: *seeking help outside family, accessing resources, and optimizing.* Figure 6 illustrates *modulating support* and the subcategories

Figure 6

Modulating Support with Subcategories and Exemplar Quotes



Subcategory2a: Seeking Help Outside the Family. This subcategory describes the women's efforts to augment the support provided by their families by seeking help outside the family. Rather than ask for specific support and risk burdening the family or disrupting family harmony, the women sought other avenues to access their desired support. They reached out to friends, health care providers, and in some cases employers. When participant Cynthia needed more support than she was receiving at home, she called on a past friend. She stated:

> "So, I had a friend, she was a psychologist. She used to be my psychologist when I was back in Mexico. She used to give me therapy. I asked her, what can I do to not feel, anxiety for all these things that I'm going through? Me feeling fat... me not eating healthy, having family issues with my family members. And she started giving me advice or talking to me."

Abigail also sought the support of her friend who had GDM in a past pregnancy. She discussed the guidance she received from her friend:

> "And she, you know, she definitely helped me out. And just kind of with the comfort and reassurance, like, hey, you know, I've been there too, like as the pregnancy goes on, it, it definitely gets worse, you know, and you do have to start managing it differently."

Kim contacted her friend who was a nutritionist for information on how to get healthier food options. She said, "she would tell me where I could find the good food at, what stores... cause I know a lot of stores carry different stuff." Seeking help outside the family helped the women to access helpful resources.

Subcategory2b: Accessing Resources. In this subcategory, the women access resources that augmented the support they received at home. They commonly accessed emotional support, informational support, and financial support for foods. Many of the women talked to friends for support and understanding. When she was asked about who she would reach out to for additional support, participant Betty said, "My friends. I consider them family". The women received information from the diabetes education nurses regarding the course of their GDM and strategies to improve their blood glucose, which included modifying their diet and exercising. In addition, the women sought supplemental information from other sources. A few of the women sought information from the internet and social media. Lindsey turned to the internet for information,

stating, “I did my online research and all the risks that if the baby grows too big that it could, um, the risk during the labor.” She also sought information by following health programs on social media: “…and then social media like following, like those programs, like those healthy websites and stuff like that.” Kim stated that she followed other women who have GDM on social media to get ideas about healthy food options, “I follow some moms, like, on the social media.” Some of the women searched Google for ways to make their regular foods healthy and how to cope with eating with family at home and at family gatherings.

Many of the women continued to struggle with their diet and exercise, especially if they faced family opposition at home. Some women incorporated strategies they received from friends, social media, and other websites to cope with the diet modification and exercise demands. To access healthier food options, most of the women sought government aid like the women, infants, and children (WIC) program which provides supplemental foods to women in need, food stamps, and unemployment if they were unemployed. However, the women complained that most the foods they received from WIC program were not GDM compliant foods. Kim stated:

> And I know that, um, WIC, they do give us a lot of stuff, because I do receive WIC. But sometimes it's not the things that we can eat for a diabetic. So, I have to go out and find other ways to get that. So, that's kind of difficult too. Like, finding what's good for me and what's not.

Though they received some carbohydrate conscious foods, the women complained that most of the foods they received from WIC were high carbohydrate and high sugar content foods, like cereals, juices, yogurts, and peanut butter. Despite seeking and accessing resources, sometimes

the women still perceived that they did not receive the support they needed or the support they accesses did not suffice. Hence the women resolved to the next process which is *optimizing*.

Subcategory2c: Optimizing. *Optimizing* is the women's efforts to make the best of their situations. They sought, received, and accessed support from multiple avenues such as family, friends, health care providers, social media and the internet, and the public system; but sometimes the support they received was not helpful or hindered their adherence to the GDM management protocol as in the case of receiving high carbohydrate food contents from the WIC program. So, the women chose to make the best of the support they received. For example, when Julia received GDM-noncompliant high carbohydrate foods from the WIC program, she traded the high carbohydrate foods with her family and neighbors for healthier options. She said:

> "I think, I think they give out too much carbs, like they give out a lot of cereal. We don't need that much cereal. Sometimes I, I'll take it to my grandma's, or I'll give it to my neighbors because we don't eat that much cereal. And then I would ask them, "Can I have fruits and vegetables instead".

Cynthia also tried to optimize her support and resources. She was responsible for cooking for her whole family, and she struggled with the temptations of cooking what her family liked while trying to adhere to her GDM-compliant diet. So, she decided to create one menu for herself and another for her family to help her stay on track with her diet. She said:

> So, it comes to like challenge because I don't cook the same for the kids as I cook for me. They don't like cheese, or they don't like eggs, or, or some of them don't like veggies and some of them don't like fruit and it's like I always tell my mom. I have to have a menu for everyone. I have to have a menu for my husband, for my son, for my nephews. And that

> gets me to be on a track, like, I eat, the kids eat, whoever eats, and we keep track of what we eat.

As the women implemented the GDM management protocol and struggled to achieve equipoise in social support, culture was a major influence on their actions and decision-making process Hence, the category of *navigating cultural norms and values* was an integral part of *Achieving Equipoise*.

Category 3: Navigating Cultural Norms and Values.

It was evident in interacting with the women that culture was forefront in their interactions and decision making. They frequently ruminated about their cultural norms and values, and it was evident to me that culture would either facilitate or hinder the factors that could support their adherence to the GDM management protocol. Abigail explained what culture meant to her and why her family's opinion prevailed over her own decision making processes:

> I mean, being Mexican, and like, you know, your family is extremely important, you know, vital to your whole existence. You know, you never turn your back on family and you never, you know, say no, basically to, to helping them and however way you can. And so that's just kinda how it's been my whole life.

With that sense of family cohesiveness in Mexican culture comes the pressure to prioritize family (nuclear and extended) in all of their actions and decision making processes. Aspects of Mexican culture that they navigated to adhere to the GDM management protocol included: 1) Protecting and prioritizing the family, 2) maintaining harmony in the family by avoiding conflict 3) cooking and eating practices within the family, especially in regard to high carbohydrate foods and poor portion control. Julia explained her frustration and struggles when she would be easily dissuaded by her family from eating foods according to the GDM protocol:

> Mexican moms always want you to eat more and more. I think it's like they want to nourish you or something. Like she can't do more because she is like old but her way of showing love is like feeding you (Julia).

When asked of the worst challenge she had with the GDM management protocol, Selma indicated that her worst challenge was changing how she ate. She explained:

> ... because, um, coming from, I guess, a Mexican background, the portions aren't what they're supposed to be. It's just, you know, you pack it on. Yeah, it's there, you eat and sometimes it's, like, they give you two scoops of rice, two scoops of beans, and then you eat it with a tortilla, like I said. So, it's just - it's, like, okay, that's way too much.

Diana articulated the same sentiments:

> Anywhere you went. If you're hungry, we'll feed you and we're just like constantly feeding you. Growing up that was like my grandpa, my aunt, yeah. They're just like constantly feeding you and feeding- oh no, you're not there. You need to be bigger and healthier.

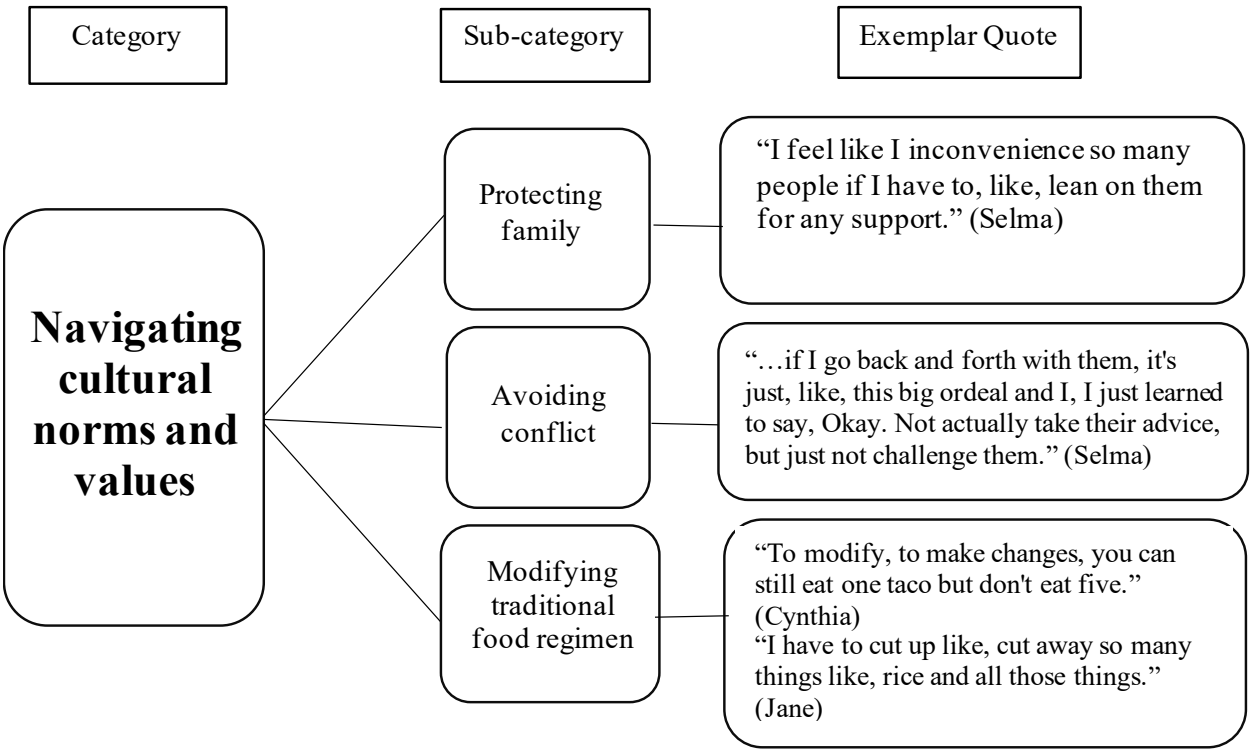
Irma was asked if there were cultural factors that could hinder her adherence to the GDM management protocol, she indicated that members of her family believe in folklore, hence do not understand, or believe in the GDM management protocol:

> Depending on who you talk to, because you go to - well, they're not elders but you go to like, you're supposed to go to your mother - or your - like the older generation 'cause they know more, they've been through life. And a lot of things they tell you like, they believe if you get scared that causes diabetes, which I'm like, I don't think that causes diabetes, but okay. Oh your blood pressure's high? Okay well then all you need to do is drink this one tea and like wait for the full moon and hop backwards.

Therefore, to successfully adhere to the GDM management protocol, the women needed to navigate cultural norms and values to achieve equipoise. The subcategories for navigating cultural norms and values are the following: *protecting family*, *avoiding conflict*, and *modifying traditional food regimen.* Figure 7 illustrates *navigating cultural norms and values* and the subcategories.

Figure 7

Navigating Cultural Norms and Values with Subcategories and Exemplar Quotes



Subcategory3a: Protecting Family. In this subcategory, most of the women refrained from soliciting the specific type of support they needed from the family, to protect the family from additional burden. Participants expressed that within their Mexican culture, many Mexican

people believe that everyone has burdens to bare and asking for help further burdens their support system. Hence, the participants in this study accepted the support the family provided without objection even when the support was perceived to be unhelpful or counterproductive. Abigail was adamant about not putting strain on her family:

> Like I don't wanna put that kind of strain on, you know, my mom, or my aunt, or, or his mom, you know? 'Cause I mean, I know that they have their own - you know, stuff to deal with. I mean, like it didn't, none of us have ever been from a very well off family or anything - we just do, you know, what we need to do to, to get by.

Abigail also said that she preferred to discuss her challenges in a support group rather than with her family, stating, regarding her family:

> It is gonna be a bit of a burden for them to take on. You know, like, they are gonna think oh my gosh, she's going through so much and, and all this stuff when they have their own things to deal with.

Selma also opted to find other avenues for support rather than ask her family. She stated, "sometimes it just feels like it's an inconvenience, I guess you would say. Like, I feel like I inconvenience so many people if I have to, like, lean on them for any support." Kelly expressed the same sentiment, "Sometimes I don't wanna bother anyone with like my problems or anything." Therefore, the women made attempts to circumvent their families to protect them. In fact, they sometimes hold information that could burden the family from them. For example, participant Daisy kept her husband's substance use from her parents to prevent them from worrying about her.

Subcategory3b: Avoiding Conflict. In this subcategory, the women attempted to keep harmony in the family by acquiescing in the family's opinions and suggestions rather than

asserting themselves. It was important to the women to show respect to the elders by not disagreeing with them. Angel's father did not believe that her GDM diagnosis was real. Particularly, he did not believe in western medicine. As such, he discouraged her from following the GDM management protocol. Angel's father would often cook foods that are not GDM compliant and encouraged her to taste the foods. She explained, "He'll be like, 'Taste this' and like his tasting is a food portion. Sometimes I won't eat it and then I'll just be like, 'Oh my God, it was so good.'" In this situation, Angel appeased her father to avoid conflict and keep harmony.

Similarly, Selma's family trivialized GDM and antagonized her efforts to adhere to the GDM management protocol. Her family members insinuated that the GDM management protocol was too stringent; therefore, they discouraged her from following the GDM management protocol as recommended. In response, she placated them by acquiescing in their views. Selma explained:

> Yeah, sometimes they're like, "Uh, that's way too much, I wouldn't poke myself four times a day," or, you know, "It's okay to have a little piece of cake on your baby shower," or, "You're not eating enough, you're gonna have malnutrition," you know, like, things like that. And I'm like, "Right," and I just say, "Okay," because I already know better, if I go back and forth with them, it's just, like, this big ordeal and I, I just learned to say, "Okay." Not actually take their advice, but just not challenge them on it.

Similarly, at family gatherings, to avoid temptation of eating foods that are not GDM-compliant or to avoid scrutiny, criticism or mocking from family members, the women sometimes remove themselves from where the foods are being cooked or served. Selma explains that when she is at family gatherings and discouraged foods are present, rather than cook with the family or sit at the table to eat with everyone, she would go outside and play with her daughter, "When they're

cooking, I'll just sit down and watch my daughter, we'll play. I don't sit at the table with them, I'll just, like, eat on my own time." In some instances, the women were mocked when they rejected unhealthy food options at family gatherings, Hence, she avoided upsetting the family or having to explain why she would not eat the provided foods to family members. Cynthia explained, "If we go to a party, I know my family say, 'Here she goes. You wanna eat a tamale but you can't 'cause you're being a nut.' They make it funny." So, to avoid such comments, the women refrain from attending family gatherings, isolate themselves at family gathering or try to make the traditional foods GDM compliant so that they can eat at family gathering and with their families.

Subcategory3c: **Modifying Food Regimen.** Modifying food regimen refers to the women's efforts to make their traditional Mexican foods GDM compliant so that they can eat and socialize with their families. The Mexican cuisine is high in carbohydrate, with food items like tortilla, rice, sope, mole, pan dulce, potatoes, tamales, enchilada, and tacos were common at dining tables. Cooking traditional foods for and eating with the family symbolizes love, caring, nurturing, and togetherness. Therefore, it was important for the women to cook traditional foods for and eat with their families. However, the traditional foods do not align with the dietary recommendations of the GDM management protocol. Therefore, the women tried different strategies to make eating their traditional foods compliant with the GDM management protocol. Some women tried modifying portions, modifying ingredients, or eliminating parts of the food. When some of the women succumbed to eating a normal portion of their traditional Mexican foods, they tried exercising afterwards to minimize the effect of the food on their blood sugar level.

Jane said, “I have to cut up like, cut away so many things like, rice and all those things.” Cynthia tried decreasing portions, stating, “To modify, to make changes, you can still eat one taco but don’t eat five.” Lindsey tried resisting the foods and modifying portions. When that did not work, she succumbed to temptation, ate the food, and exercised to minimize the damage:

> …because Mexican and all of my family’s meals include tortillas - especially homemade ones. They’re hard to resist, so once in a while, like, I’ll have one fourth of it, like, you know, half of it and then, um, last time I had like almost a whole one and afterwards, I was like, I need to go walk for like at least 20 minutes, because I know I think it’s - my blood sugar is going to be high if I don’t.

Similarly, Stefanie tried modifying portions of the traditional Mexican foods to make them GDM complaint:

> And I was like, okay, that’s going to be a little difficult, ‘cause I do love, like I mentioned before, pregnancy, I did love my bean-cheese burritos. Had to kinda cut that a little bit because of the flour tortillas.

In accordance with the Mexican cultural value of family cohesiveness, the women were aware that they needed the support of their family to successfully implement and adhere to the GDM management protocol. Additionally, they were cognizant of not burdening their support system and maintaining harmony in their families. Hence, the women vacillated between the categories and subcategories to balance and counterbalance their families’ and their efforts, thereby *Achieving Equipoise* in social support.

Chapter Summary

In this chapter, the results from the semi-structured interviews were analyzed and a core category, *Achieving Equipoise* emerged to explicate the processes that facilitate social support of

Mexican immigrant women with GDM within the context of their culture and how social support can influence their adherence to the GDM management protocol. *Achieving Equipoise* in social support involved the Mexican immigrant women with GDM *seeking family support, modulating support,* and *navigating cultural norms and values.* Each category of *Achieving Equipoise* is encompassed by several subcategories. The subcategories for *seeking family support* involved *telling the family* about the diagnosis, the women and family members *disbelieving* the diagnosis, and then *accepting* the diagnosis, and the family *holding the women accountable* for following the GDM management protocol once they accepted the diagnosis. While the subcategories for *modulating support* involved the women *seeking help outside the family*, the women *accessing resources,* and the women *optimizing* their resources. The *navigating cultural norms and values* subcategory involved the women *protecting their family*, *avoiding conflict*, and *modifying traditional food regimen. Achieving Equipoise* is a non-linear, interconnected process, a result of interactions between the categories and subcategories. *Achieving Equipoise* in social support facilitated the social support of Mexican immigrant women with GDM and promoted their adherence to the GDM management protocol. Otherwise, the women who did not achieve equipoise in social support continued to struggle with adhering to different aspects of the GDM management protocol.

CHAPTER 5

DISCUSSION

This constructivist GT study explored the perception of social support among Mexican immigrant women with GDM within the context of their culture and sought to discern the process through which social support could influence their adherence to the GDM management protocol. While multiple studies have examined GDM, social support, and Mexican immigrant women, available knowledge is limited regarding the processes that facilitate culture-related social support in this population of interest. This constructivist GT addressed the following gaps in the current literature:

- The perception of social support among Mexican immigrant women diagnosed with GDM and how their culture influences their social support.
- The processes that Mexican immigrant women with GDM use to seek and receive social support.
- How social support influences the adherence Mexican immigrant women with GDM to the GDM management protocols.

A diagnosis of GDM and the associated management protocol can pose a harrowing ordeal for pregnant women, especially Mexican immigrant women who may have added burdens. The literature reveals extensive study and discussion of the impact of social support on physical, mental, and emotional health, especially the effect of social support on the management of chronic illnesses (Baqutayan, 2011; Bucholz et al., 2014; Elloker & Rhoda, 2018; Ikeda et al., 2008). Albeit a period of immense happiness and excitement, pregnancy in itself can be a stress-inducing event in a woman's life, as such, a diagnosis of GDM can further elevate that stress. In a collectivistic culture like Mexican culture, the general societal perception is that Mexican

immigrant women with GDM have an abundance of social support. However, the study findings revealed that these women actually lack the social support required to manage their GDM diagnosis and adhere to the prescribed management protocol. Hence, when the study participants had to implement the stringent GDM management protocol, including strict diet modification, increased exercise, and glucose self-monitoring, they realized that they needed social support from multiple sources to achieve their GDM outcome goals.

The theory of *Achieving Equipoise* emerged from the lived experiences of 22 Mexican immigrant women with GDM as the process that facilitated their social support within the context of their culture and encouraged their adherence to the GDM management protocol. As the theory unfolded, the women sought family support, modulated their support resources, and achieved equipoise in support when they balanced these processes through a lens of cultural beliefs, norms, and values. The women vacillated between categories and subcategories, indicating that the process of Achieving Equipoise was not linear. Study findings support that the women who received the type of social support that they perceived as beneficial were able to adhere to the GDM management protocols. Unfortunately, the majority of the women lacked the support they desired the most, support for the diet modification and exercise required to manage their blood glucose.

In alignment with their Mexican cultural value, the women refrained from imposing their support needs on their families, refusing to further burden the support system they believed was equally burdened. When the family did not offer support for the women's diet modification, it became difficult for the women to eat with their family or socialize with extended family. Rather than burden their family with their support needs, the women sought support from other avenues. When the some of the resources the women accessed were perceived to be unhelpful or deemed

to hinder their GDM management activities, many of the women found other ways to optimize the support they received. For example, when one of the women received foods with high carbohydrate contents from the WIC program, she exchanged the foods with her family and neighbors for healthier options, rather than eat the GDM non-compliant foods. While negotiating the process of *Achieving Equipoise* in social support, the influence of these Mexican immigrant women's culture on their every action and decision making was evident.

This chapter will interpret the study findings, comparing the theory of *Achieving Equipoise* to the limited information that currently exists on the social support processes of Mexican immigrant women. Additionally, this chapter will explore the women's adherence to the GDM management protocol, discuss the strengths and limitations of the study, the implication for practice, and suggestions for future research.

Interpretation of the Results

This study invited the participants to describe their experiences with GDM. The women were graciously open and discussed their lived experiences freely. In particular, they described their experiences with being diagnosed with GDM, implementing the GDM management protocol, their support system, their culture, and how these factors influenced each other. The study findings indicated that for Mexican immigrant women with GDM, the diagnosis of GDM marked the beginning of the process of *Achieving Equipoise* in social support.

Achieving Equipoise explains the processes that facilitate the social support of Mexican immigrant women with GDM to help them implement and adhere to the GDM management protocol. These processes involved the women appraising their social support resources and evaluating the extent to which their existing social support (usually from their families) helped them meet their GDM management goals to achieve euglycemia. Depending on the extent to

which their social support needs were met, the women sought to augment their existing social support by seeking and accessing social support resources from other avenues other than their families. As the women negotiated the available social support resources, their cultural norms and values influenced their actions and the decision-making processes surrounding their social support. Hence, *Achieving Equipoise* signified the synergy between social support and cultural norms and values to facilitate the implementation of and adherence to the GDM management protocols for Mexican immigrant women with GDM. This finding aligns with the results of a study that investigated the influence of culture and social support on self-reported empowerment to manage chronic illnesses (Gonzalez et al., 2020). Though the study population was Alaskan-native American-Indians, the authors discovered that maintaining cultural identity improved the influence of social support on the empowerment to manage diabetes. The current study identified three themes in the participants' lived experiences involving seeking and modulating social support while navigating cultural norms and values. For the Mexican immigrant women in this study, the process of *Achieving Equipoise* started with the women *seeking family support*.

Seeking Family Support

Most of the women expressed shock and disbelief about receiving the diagnosis of GDM even if they had experienced GDM in a previous pregnancy or had a family history of diabetes, a sentiment expressed by participants in other qualitative studies of women diagnosed with GDM (Carolan-Olah et al., 2016; Martis et al., 2018) . Customary to the sense of family identification and attachment predominant in a collectivistic culture such as Mexican culture (Smith-Morris et al., 2012; Steidel & Contreras, 2003; Suro, 2007), the women's immediate action was to tell their family of their GDM diagnosis. The women rarely verbalized their needs to the family, thus, telling them of their diagnosis was an indirect way of seeking family support. They told their

husbands first and then the rest of the family. As evidenced in the literature, in the hierarchical Mexican culture, the husband is the patriarch and primary decision-maker in the family (Galanti, 2003). Hence, it was not surprising that the women chose to tell their husbands first. However, the family also initially disbelieved the diagnosis, thereby prolonging the women's state of disbelief.

Similar to the findings of another qualitative study which found that a woman's perception of the GDM diagnosis can influence her acceptance of the GDM management activities (Martis et al., 2018), disbelieving the diagnosis deterred participants of the current study from implementing the GDM management protocol. Some participants missed their initial appointment with the diabetes education nurse, while others met with the diabetes education nurse but did not implement the GDM management protocol as counseled. That said, the period of disbelief was short-lived as the participants soon accepted the reality of the GDM diagnosis due to their persistently abnormal blood glucose levels. Learning more about the risks of GDM and the status of their blood glucose from health-care personnel motivated the women to implement the GDM management protocol out of concern for the health of their unborn babies and the risk of developing GDM in the future. The women took the information they received from the health-care personnel back to their families and guided them to accepting their GDM diagnosis.

The participants also described how the GDM diagnosis changed the course of their pregnancy and talked about the layers of stress that implementing the GDM management protocol added to their lives. As evidenced in the literature, while women with pregestational diabetes have an abundance of time to adjust to having diabetes, women with GDM have a considerably shorter time to adjust to GDM and implement crucial lifestyle changes to control

their blood glucose levels and prevent adverse pregnancy outcomes (Ghaffari et al., 2014; Hui et al., 2014; Surucu et al., 2018). Pregnant women are commonly screened for GDM between 24-28 weeks. Hence, GDM diagnosis usually occurs in the third trimester of pregnancy, which allows the women only 10-12 weeks to implement activities to control their GDM.

In this study, despite the women's understanding of the urgency of implementing the GDM management protocol, and their desire to control their blood glucose levels to prevent adverse pregnancy outcomes, they struggled with adhering to the GDM management protocol. Although the families offered their support, the women continued to lack the support they desired for their GDM management. It became obvious to the women that the family would not be their sole source of support for the GDM management activities. This finding is consistent with the findings of previous qualitative studies that explored the perceived barriers to diabetes management of Hispanic immigrants (Carbone et al., 2007; Hu et al., 2013). The authors of these studies found that Hispanic immigrants, including Mexican immigrants may lack the support needed (especially support for diet modification) for their diabetes management.

Modulating Support

In Mexican culture, women are conditioned to prioritize the needs, wants, and opinions of the family over their own priorities (Caballero, 2011; Martinez et al., 2017). Also, according to Mexican culture, cooking traditional foods for one's family projects love, caring, and nurturing, and eating together fosters togetherness (Counihan, 2009; Perez, 2010). Therefore, the participants attempted to modify their traditional foods to meet the GDM management protocol standards, so that they could eat with their families. However, the women discovered that they could not afford to buy healthier food options for themselves and their family. Moreover, their families rejected the modified foods, and at family gatherings, family members did not provide

GDM-compliant food options for the women. These findings are consistent with the findings of other qualitative studies that examined the perceptions of barriers to diabetes management in Hispanic immigrants (Hu et al., 2013; Carolan-Olah et al., 2016). Hu and colleagues conducted 5 focus groups of Hispanic immigrants with diabetes and their family members while Carolan-Olah and colleagues conducted an interpretative phenomenological analysis of 18 Hispanic women with GDM. Though the studies were not specific to Mexican immigrant women with GDM, the women in the studies expressed their struggles with lack of support from their family for the diet modification, cooking separate meals for themselves and their family, and not having the funds to purchase healthy food options.

Regardless of the lack of support for diet modification and exercise, the Mexican immigrant women in the current study described receiving some form of support from their families, such as checking on them and holding them accountable and instrumental support, such as giving them a ride to their clinic appointments or babysitting their children while they kept their clinic appointments. While they were appreciative of the support they received from their family members, the women expressed the need for additional support. However, the cultural expectations of *familismo,* which compels the women to protect their family from burden and maintain harmony in the family (Ayon and Aisenberg, 2010; Caballero, 2011; Eggenberger et al., 2006) deterred the study participants from apprising their family members of the type of support they desired. Hence, they sought additional support outside the family.

Similar to the findings of a systematic review of 41 qualitative studies which identified that women with GDM needed informational, emotional, financial, and cultural support (Craig et al., 2020), participants of the current study sought informational support from friends, support groups, internet, and health care providers. The nature of the support they sought included

strategies for eating traditional foods with family and at family gatherings, while adhering to the GDM management protocol. Some of the women expressed concern for walking alone, therefore, they asked their friends to accompany them on their walks. For financial resources to buy healthier food options, the women sought and accessed public assistance resources such as the WIC program and food stamps. When the support or resources the women accessed were unhelpful or seemed to hinder their GDM management, they resolved to the process of *optimizing*. Examples within this process include the women trading the high carbohydrate foods they received from the WIC program with family members and neighbors for healthier options or feeding the high carbohydrate foods like cereal to their children while reserving the healthier options for themselves.

Navigating Cultural Norms and Values

Throughout the process of *Achieving Equipoise* in social support, the influence of their culture was evident in the participants' actions and decision-making. It was not surprising that rather than expressing their support needs to their families, the women simply accepted the support family members offered and sought to augment the support elsewhere. This finding aligned with the findings of Chang & Bryan (2015) in which the authors conducted 5 focus groups of Asian Americans (n = 27) and Latino Americans (n = 31) to examine the influence of culture on social support. The authors discovered that people from collectivistic cultures such as Mexican culture tend to refrain from seeking support because they share the cultural assumption that seeking social support would further burden people in their support system, whom they assume are equally burdened.

Another observation in the current study was the women's need to maintain harmony in their families at all costs. This observation corresponds with other studies' findings that women

in Mexican culture are expected to maintain harmony in the family and avoid conflict (D'Alonzo, 2012; Nuñez et al, 2016). The narrative from the current study indicated that participants avoided conflict and maintained harmony by limiting requests of their families and conforming to their families' desires. For example, when their husbands and children rejected the healthier food options, the women succumbed to eating the traditional foods with them or cooked separate meals for themselves. Similarly, when their husbands refused to exercise with them, they sought friends to exercise with them. Lastly, when family members antagonized their GDM management activities, they avoided conflict by acquiescing to the families' opinions.

Although food is a source of happiness, pleasure, and togetherness in Mexican culture (Counihan, 2009; Perez, 2010), for these women, food was a source of stress instead. When asked about the most challenging aspect of the GDM management protocol, the women unanimously cited the diet modification. They struggled with eliminating the staples representing their traditional foods, like tortilla, rice, mole, and many more. Thus, they tried to modify their familiar traditional foods to conform with the requirements of the GDM management protocol. For example, they tried limiting the number of tortillas at a meal, reducing their portions of rice, and substituting ingredients. Nonetheless, in many instances, they endured resistance from family members, especially spouses and children who rejected the modifications.

Many of the women tried eating the modified traditional foods by themselves, but often succumbed to temptation and ate the regular traditional foods with the family. Furthermore, in their attempt to avoid conflict, rather than reject GDM-noncompliant foods at family gatherings or endure mockery for not eating the foods, the women isolated themselves at family gatherings. For example, one participant said she would take her daughter outside and play with her at family gatherings, rather than socialize with the adult family members. Therefore, she avoided

rejecting GDM-noncompliant foods or answering questions about what she was eating or why she was not eating the foods served.

In summary, these Mexican immigrant women who were attempting to implement and adhere to the GDM management protocol required significant social support. Though they were privileged to receive the support afforded them by their collectivistic culture, their culture also inhibited the GDM management activities, urging them to seek support outside their family. Through an interaction of processes that included seeking family support, modulating support, and navigating cultural norms and values, the women achieved equipoise in social support.

The study findings aligned with the findings of Lyu and Zhang (2019), who in their concept analysis of adherence using Walker and Avant's concept analysis framework concluded that social support is an antecedent of adherence. Specifically, the authors found that support from family, partner, friends, and health-care providers improved adherence to treatment. When the Mexican immigrant women in the current study achieved equipoise in social support, they felt supported and accomplished their GDM management goals.

At the time of this study, most of the women interviewed were struggling to achieve normal blood glucose levels. Only a few of the women had implemented the GDM management protocol in its entirety and had sustained euglycemia. The women who successfully negotiated the processes of *Achieving Equipoise* verbalized that they perceived social support. They had successfully implemented and were adhering to the GDM management protocol and had sustained euglycemia. Presumably, negotiating the processes of *Achieving Equipoise* facilitated social support for these Mexican immigrant women with GDM and encouraged their adherence to the GDM management protocol.

Implications for Practice

The current study findings have several implications for practice. The GT of *Achieving Equipoise* indicates that social support of Mexican immigrant women with GDM within the context of their culture is critical to implement and adhere to the GDM management protocol and achieve the target blood glucose levels. Thus, preventing adverse maternal–fetal outcomes such as, macrosomia, birth injury, instrumental or operative delivery, fetal morbidity, and the increased risk of future development of diabetes for the woman and her offspring. *Achieving Equipoise* is a process that involves an interaction between *seeking family support*, *modulating support*, and *navigating cultural norms and values*.

Theoretically, *Achieving Equipoise* facilitates and strengthens the social support of the target population and encourage adherence to the GDM management protocol to achieve euglycemia. Most women in the study continued to struggle with different aspects of the GDM management protocol. The few women who were able to implement and adhere to the GDM management protocol and maintained normal blood glucose levels deliberately negotiated the process of *Achieving Equipoise*, through *seeking family support, modulating support*, and *navigating cultural norms and values*.

It is well known that social support is integral to managing chronic illnesses, positive health outcomes, and adherence to treatment (Elloker & Rhoda, 2018; Lemstra et al., 2018; Muhwava et al., 2019). Furthermore, social support is found to be most effective in congruence with cultural relationships and expectations (Chen et al., 2012; Kim et al., 2008) Hence, care of Mexican immigrant women with GDM should focus on helping them access the needed social support by guiding them through the process of *Achieving Equipois*e, consequently, facilitating the implementation of and adherence to the GDM management protocol.

In the *seeking family support category*, the women tell their family about their GDM diagnosis immediately after being diagnosed because family approval and support is integral to their decision-making (Ayon and Aisenberg, 2010; Caballero, 2011; Eggenberger et al., 2006). In fact, in prior studies of Hispanic women with GDM, which included Mexican immigrant women, lack of support from family was cited as a barrier to implementing and sustaining GDM management activities (Collier et a., 2011; Hu et al., 2013). Accordingly, health care providers should consider integrating the family into the Mexican immigrant women's GDM management plan and consider each individual woman's family dynamic when providing guidance and education. Moreover, including designated family members in the diabetes education sessions would be beneficial, allowing family members to receive GDM information directly from health-care providers. This approach may shorten the period of *disbelieving* and facilitate *accepting*, and subsequently implementing the GDM management protocol. Additionally, such a practice will decrease anxiety and ambiguity concerning GDM and GDM management for family members.

Mexican immigrant women protect their families from added burden (Furman et al., 2009; Chang & Bryan, 2015), hence they do not request social support from the family and only accept what is offered. To help the women access the needed social support, health care providers may include the social services department as part of the women's GDM management plan. Social services can help the women access community resources, such as, food resources like the WIC program and food stamps, rideshare, and GDM support groups. Such measures can help to alleviate stress which has been shown to be a risk factor for nonadherence to treatment in persons with chronic illness. For example, in their quantitative study of over 9,000 people with chronic illnesses, Roohafza et al., 2016) concluded that stress is a risk factor for nonadherence.

Study findings support the premise that cultural norms and values guided these women's interactions with family as well as the world around them. These cultural characteristics also guided their perceptions of health, illness, diseases and treatments, foods, eating, socialization, and decisions regarding seeking and accepting help (Singleton & Krause, 2009). The women's cultural norms and values were at the forefront of every decision they made and crucial to the process of *Achieving Equipoise*. Therefore, it is imperative for health-care providers to gain an understanding of Mexican cultural norms and values in planning these women's GDM management. For example, knowing that Mexican immigrant women would protect their family by not burdening them with requests for support, the health-care provider can include family in their GDM management plan, indirectly apprising the family of the women's support needs. Considering that their culture compels them to help each other at all costs, if family members are made aware of the women's support needs, they are likely to provide the support accordingly. Additionally, including family members in the women's care can reduce conflict in the family's perception of the women's GDM management needs.

It was essential to the Mexican immigrant women in this study to consume traditional foods and eat with their families. The women unanimously expressed that modifying their diet was the most challenging and stressful part of their GDM management protocol. Therefore, successfully modifying their traditional foods to comply with the GDM management protocol and to the family's satisfaction will promote adherence to the GDM management protocol. Hence, it is reasonable for health-care providers to include dieticians who are familiar with Mexican culture and diet in the interprofessional care team of Mexican immigrant women with GDM. Such familiarity would enable these professional to help the women achieve the goal of

eating familiar traditional foods with their family while adhering to the GDM management protocol. Table 2 summarizes the theoretical findings of the study.

Table 2.

Summary of Theoretical Findings of Social support in Mexican Immigrant Women with GDM and the Effect on their Adherence to the GDM Management Protocol

Desired social support	Barriers to social support	Women's strategies for obtaining social support	Implications for practice
Family empathy and acceptance of GDM Family support for diet modification Family eating modified diet with the women Family making GDM-compliant foods available at family social gathering Resources for healthier food options Family exercising with Woman to encourage her.	Family disbelieving or trivializing GDM diagnosis Family rejecting modified diet Family eating GDM-noncompliant foods in front of the women Family offering GDM-noncompliant foods to women Family making disparaging remarks regarding GDM Adherence to folklore and remedies Lack of funds to purchase healthier food options Protecting the family from burden by not asking for desired support Receiving high carbohydrate foods from the WIC program	Seeking information about GDM and telling the family Seeking support outside the family: friends, health-care providers, support groups Modifying traditional food ingredients Modifying traditional food portions Trading WIC-provided foods for healthier options Isolating self to avoid scrutiny and temptation Acquiescing to family members' opinions to avoid conflict	Include family in GDM care plan Culturally sensitive GDM education and care plan Literacy-appropriate GDM education materials Dietary consultants familiar with Mexican culture and foods Development of easily adapted culturally appropriate food recipes. Providing interprofessional collaborative care

Implications for Research

This GT of *Achieving Equipoise* describes the processes facilitating social support of Mexican immigrant women with GDM and promoting their adherence to the GDM management protocol. Nonetheless, further research is required to test the findings of this study. In particular, to determine if the GT of *Achieving Equipoise* is applicable to other collectivistic cultures such as the Asian culture, or other Hispanic sub-cultures. Pregnant women have a narrow window of opportunity to manage diseases that complicate their pregnancy. Therefore, using current study findings as a foundation, future research can focus on developing disease management strategies that include culturally congruent social support to facilitate implementation and adherence to treatment.

In addition, there is further opportunity to explore the context of behavior change models specific to the Mexican -American culture and incorporate measurements of family structure, family cohesion, cultural and other aspects of social support. This will advance the field's understanding of health issues and culturally congruent interventions to address them. Furthermore, future research is needed to devise culturally specific diabetic diet plans to promote adherence to diabetes management plans. Lastly, the current study was conducted using a single data source, semi-structured interviews. Future studies should include other sources of data, such as direct observation, focus group, or photovoice for varied methods of confirming the current study findings.

Strengths and Limitations

The strengths of this study are related to the rich knowledge that the lived experiences of the study participants contributed to the scarce information available on the study topic. There were 22 participants, a suitable number for a GT study (Vasileiou et al., 2018). The participants

had only been in the United States for 10 years or less, the length of time that researchers have projected that health and lifestyle changes related to acculturation usually occur in immigrants (Booth et al., 2013; Dahlan et al., 2019; Frank et al., 2016; Kim & Kim, 2013; Sandstrom & Gelatt, 2017; Yarnell et al., 2017). Another strength of this study is the rigorous and systematic application of the constructivist GT methodology as delineated by Charmaz (2006). Finally, member checking validated that the findings of the study accurately represent the women's lived experiences.

One of the study limitations is that the participants were recruited from one site in a small desert community in Southern California. Although, all were Mexican immigrants, the women's experiences and challenges might be dissimilar if their geographical locations were different, for example if they lived in the city. Additionally, the GT of *Achieving Equipoise* was based on one data source, face-to-face semi-structured interview of participants. Findings were limited by the use of one data collection method, the interview. Additionally, due to COVID-19 restrictions, the participants and I wore masks and maintained a separation of at least 6 feet apart which presumably infused an element of unfamiliarity that might have limited the participants openness.

Conclusion

The GT of *Achieving Equipoise* elucidates the perception of social support among Mexican immigrant women with GDM, the processes that facilitate their social support within the context of their culture, and how social support can influence their adherence to the GDM management protocol to achieve glycemic control. While the collectivistic Mexican culture is presumed to be rich in social support, current study findings indicate that these women frequently lack the social support necessary to implement and adhere to the GDM management

protocol. Additionally, the study findings indicate that the women's social support and adherence to the prescribed GDM management are greatly influenced by their cultural norms and values. The process of *Achieving Equipoise* should be considered in the GDM management to improve adherence to treatment and subsequently achieve euglycemia, thereby, mitigating negative maternal fetal outcomes associated with GDM. The findings of this study lay a foundation for future research, and the development and testing of interventions to promote healthy maternal–fetal outcomes.

APPENDIX A: INFORMED CONSENT FOR PARTICIPANTS

INFORMED CONSENT

School of Nursing

TITLE OF STUDY **Social /support of Mexican Immigrant Women with Gestational Diabetes Mellitus (GDM): A Constructivist Grounded Theory Study**

INVESTIGATOR(S): Angela Sojobi, DNP, CNM, RN, Rebecca Benfield, PhD, CNM Andrew Reyes, PhD, RN.

For questions or concerns about the project, you may contact **Angela Sojobi** at **760-953-7365 or Sojobi@unlv.nevada.edu.**

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the project is being conducted, contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 888-581-2794 or via email at IRB@unlv.edu.**

Purpose of the Study

You are invited to participate in a research study about social support of Mexican women with GDM to influence adherence to the GDM management protocols. The purpose of this study is to explore the perception of social support among Mexican immigrant women with GDM within the context of their culture and to discern the process through which social support influences their adherence to GDM management protocols.

Participants

You are being asked to participate in the project because you fit these criteria: a) you are age 18 and over, b) you are of Mexican origin and have been in the United States for 10 years or less, c) you are pregnant and have been diagnosed with GDM, d) you are receiving prenatal care and have been prescribed a GDM management protocol.

Procedures

If you volunteer to participate in this study, you will be asked to participate in an interview to talk abour your experience with GDM and the help and support that is available to help you management your GDM. The interview will last a minimu of 1 hour and will be digitally

recorded. We may ask you to attend a second interview which may last about 30 minutes to verify that our analyses of your first interview are consistent with your experience.

Benefits of Participation

There may not be direct benefits to you as a participant in this study. However, we hope to learn about the processes that facilitate social support of Mexica women with GDM and social support can help them manage their GDM.

Risks of Participation

This project includes minimal risks to you. You may feel uncomfortable or emotional when answering some questions about your experiences with GDM.

Cost /Compensation

There may not be financial cost to you to participate in this study. You will be financially compensated for participating in the study. The study will take about one hour of your time for the first interview, and about 30-45 minutes for the follow-up interview. You will be provided with a $25 gift card to Target for your participation in the first interview, and additional $10.00 in cash for your participation in the follow-up interview. This compensation will be given to you after the interview sessions. If you decide to withdraw from the study in the middle of the interview, you will still be provided your monetary compensation. You will also get to keep the monetary compensation if you decide to withdraw your data after the interview.

Confidentiality

All information gathered in this study will be kept as confidential as possible. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a password protected computer on a private, password-protected drive that is always kept directly with the researcher or in a locked office. Any non-digital study materials will be kept in a locked cabinet in a private, locked office at Desert Valley Health Center. All study materials will be deleted/destroyed three (2) years after the completion of the study.

Voluntary Participation

Your participation in this project is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with Desert Valley Health Center. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:

I have read the above information and agree to participate in this project. I have been able to ask questions about the research project. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant Date

Participant Name (Please Print)

Audio Taping:

I agree to be audio taped during the interview for the purpose of this research study.

Signature of Participant Date

Participant Name (Please Print)

APPENDIX B: SEMI-STRUCTURED INTERVIEW QUESTIONS

Tell me about yourself

Who are the most important people to you?

Who can you go to if you need help?

What type of help do you feel you can ask for?

What type of help do you think you need while pregnant?

What is your understanding of gestational diabetes?

How does it feel to have gestational diabetes?

How does gestational diabetes affect your life?

How are you doing with controlling your blood sugar?

What difficulties do you have with maintaining a normal blood sugar?

What do you think would be most helpful in maintaining normal blood sugar?

How could your family, friends, or healthcare providers support you to maintain a normal blood sugar?

Are there any resources you would like to have access to that you don't currently have access to?

Is there anything else that you would like to tell me about your experience and/or difficulties with controlling your blood sugar?

Is there anything else you would like to tell me about following the GDM management protocol?

APPENDIX C: AUTHORIZATION LETTER TO CONDUCT RESEARCH

Desert Valley Medical Group
Affiliated with Desert Valley Hospital

(760) 241-8000

16850 Bear Valley Road
Victorville, CA 92395

Letter of Authorization to Conduct Research at Facility

Office of Research Integrity – Human Subjects
University of Nevada Las Vegas
4505 Maryland Parkway Box 451047
Las Vegas, NV 89154-1047

Subject: Letter of Authorization to Conduct Research at Desert Valley Medical Center OB clinic.

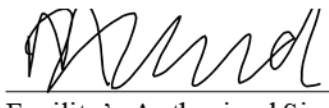
Dear Office of Research Integrity – Human Subjects:

This letter will serve as authorization for the University of Nevada, Las Vegas ("UNLV") researcher/research team, Dr. Rebecca Benfield, Dr, Andrew Reyes, and Angela Sojobi to conduct the research project entitled "Social Support of Mexican Immigrant Women with Gestational Diabetes Mellitus: A Constructivist Grounded Theory Study" at Desert Valley Medical Center, OB clinic, 16850 Bear Valley Rd, Victorville. CA 92395.

The Facility acknowledges that it has reviewed the protocol presented by the researcher, as well as the associated risks to the Facility. The Facility accepts the protocol and the associated risks to the Facility and authorizes the research project to proceed. The research project may be implemented at the Facility upon approval from the UNLV Institutional Review Board.

If we have any concerns or require additional information, we will contact the researcher and/or the UNLV Office of Research Integrity – Human Subjects.

Sincerely,



Facility's Authorized Signatory

08/16/2020
Date

Maryam Zand, MD. Chief of OB/GYN
Printed Name and Title of Authorized Signatory

APPENDIX D: EXEMPT STATUS FROM UNLV IRB

UNLV Biomedical IRB - Exempt Review
Exempt Notice

DATE:	September 28, 2020
TO:	Rebecca Benfield, PhD
FROM:	Office of Research Integrity - Human Subjects
PROTOCOL TITLE:	[1652856-1] Social Support of Mexican Immigrant Women with Gestational Diabetes Mellitus: A Constructivist Grounded Theory Study
ACTION:	DETERMINATION OF EXEMPT STATUS
EXEMPT DATE:	September 28, 2020
NEXT REPORT DUE:	September 27, 2023
REVIEW CATEGORY:	Exemption category # 2i

Thank you for your submission of New Project materials for this protocol. This memorandum is notification that the protocol referenced above has been reviewed as indicated in Federal regulatory statutes 45CFR46.101(b) and deemed exempt.

We will retain a copy of this correspondence with our records.

PLEASE NOTE:
Upon final determination of exempt status, the research team is responsible for conducting the research as stated in the exempt application reviewed by the ORI - HS and/or the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials.

If your project involves paying research participants, it is recommended to contact the ORI Program Coordinator at (702) 895-2794 to ensure compliance with the Policy for Incentives for Human Research Subjects.

Any changes to the application may cause this protocol to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**. When the above-referenced protocol has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI - HS of its closure.

If you have questions, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 702-895-2794. Please include your protocol title and IRBNet ID in all correspondence.

Office of Research Integrity - Human Subjects
4505 Maryland Parkway . Box 451047 . Las Vegas, Nevada 89154-1047
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APPENDIX E: WRITTEN INFORMATION FOR PARTICIPANTS

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Written Information

Social Support of Mexican Immigrant Women with GDM: A Constructivist Grounded Theory Study

Primary Investigator: Angela Sojobi, DNP, CNM, RN

I am inviting you to participate in a research study. I am a Certified Nurse Midwife completing my Doctor of Philosophy degree in Nursing at the University of Nevada, Las Vegas under the supervision of Dr. Rebecca Benfield and Dr. Andrew Reyes. The purpose of this study is to explore the lived experiences of Mexican immigrant women with gestational diabetes, what their perception of their social support needs are, and how they seek and receive social support. It is my hope that the results of this study will contribute to the development of strategies that include social support to help Mexican immigrant women manage their gestational diabetes better and achieve good health outcomes for themselves and their babies.

If you are interested in being a part of this study, you will participate in an interview with me. Before the interview, you will be given detailed information about the study and asked to sign an informed consent to participate in the study. The interview will take place at a place and time that is convenient for you and that we mutually agree on. The interview will last about 1 hour. You will be asked questions about your experiences with gestational diabetes, your support needs, if and how you get the support you need, and how getting the support you need can help you manage your gestational diabetes. After the interview, you will be invited for a follow up interview to discuss the findings of the data analysis and to verify if the findings represent your experiences. This interview will last approximately ½ -1 hour. All interviews will be digitally recorded to ensure that I do not miss anything you say.

During the interview, it is possible that you may experience psychological discomfort related to the things we discuss and may not wish to continue the interview. To the best of my knowledge, there is minimal risk associated with participating in this study. However, having a chance to talk about your experiences may be a therapeutic experience.

Participation in this study is voluntary. You are free to stop the interview at any time and for any reason. You do not have to answer any questions that you do not want to answer. If you change your mind and decide that you do not want to take part in this research, you may do so at any time.

Your participation or non-participation will not, in any way, affect your care. There is no payment for participating. However, if you decide to participate, as a token of my appreciation, you will receive a $25 gift card for Target at the completion of the interview.

Anything you tell me will be strictly confidential and no real names will be used in reports of the study. All information that you provide about yourself will be password-protected in my computer that only I have access to. After the transcription of the data is completed, all identifying information will be removed. You will also have the opportunity to use a pseudonym. A summary of what we learned from

APPENDIX F: RECRUITMENT FLIER

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You Are Invited!

To Participate in a Research Study

About Social Support of Mexican Women with Gestational Diabetes

You are eligible to participate if you:

- Are at least 18 years old
- Are between 24 – 36 weeks pregnant
- Have been diagnosed with gestational diabetes
- Are on the gestational diabetes management protocol
- Do not have any other medical problems

Volunteers will participate in:

- An interview for about 1 hour
- Follow-up interview for 30-45 minutes

In the interview, you will be asked about:

- Your experience with having gestational diabetes
- Your perception of social support
- How you perceive social support can help you with your gestational diabetes management

If you are interested, please let your health care provider know or you can contact

Angela Sojobi at: Sojobi@unlv.nevada.edu or (760) 953-7365 for more information

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CURRICULUM VITAE

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Qualification Highlights

- Extensive obstetrics and gynecology experience as a practicing CNM/NP
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- Clinical instructor for RN students

Work Experience

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Women's Health Concentration Program director
Assistant Professor

- MSN women's health concentration

Mount Saint Mary University, Los Angeles CA **January 2017 to June 2019**

Adjunct faculty for Associate degree in Nursing

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Eisner Pediatrics (MLK Hospital), Los Angeles CA **September 2015 to present**

Full scope practice as a Certified Nurse Midwife in both clinic and hospital setting

- Preconception counseling, gynecological care (including adolescent, menopausal, and postmenopausal care), family planning/contraception.
- Obstetrical care; antepartum, intrapartum, postpartum, newborn care

St Mary Medical Center, Apple Valley CA **July 2010 to July 2018**

Full scope practice as a Certified Nurse Midwife in both clinic and hospital setting

- Preconception counseling, gynecological care (including adolescent, menopausal, and postmenopausal care), family planning.
- Obstetrical care; antepartum, intrapartum, postpartum, newborn care

Women's Care, Moreno Valley CA (Part-time) **Aug 2007 to November 2012**

Full scope practice as a CNM/NP in a clinic setting only

- Preconception counseling, gynecological care (including adolescent, menopausal, and

postmenopausal care), family planning/contraception.
- Antepartum care only

Kaiser Permanente, Bellflower CA **Nov 1998 to Jan 2010**

Full scope practice as a Certified Nurse Midwife in both clinic and hospital setting
- Preconception counseling, gynecological care (including adolescent, menopausal, and postmenopausal care), family planning/contraception.
- Obstetrical care; antepartum, intrapartum, postpartum, newborn care

Desert Valley Medical Group, Victorville CA **Sep 1994 to Jun 2004**

Full scope practice as a Certified Nurse Midwife in both clinic and hospital setting
- Preconception counseling, gynecological care (including adolescent, menopausal, and postmenopausal care), family planning/contraception.
- Obstetrical care; antepartum, intrapartum, postpartum, newborn care

Queen of the Valley Hospital, West Covina CA **Apr 1990 to Sep 1994**

Labor and Delivery Nurse
- Assess, support and implement plan of care for laboring patients in a compassionate manner, incorporating the individual patient's and family's needs as much as possible
- Initial assessment and care of the newborn, recognizing deviations from normal and swiftly implementing consultation and care
- Initial assessment and care in the immediate postpartum period

East Los Angeles Doctor's Hospital, Los Angeles CA **Jan 1987 to Sep 1994**

Labor and Delivery Nurse
- Assess, support and implement plan of care for laboring patients in a compassionate manner, incorporating the individual patient's and family's needs as much as possible
- Initial assessment and care of the newborn, recognizing deviations from normal and swiftly implementing consultation and care
- Initial assessment and care in the immediate postpartum period

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BLS Certification – 01/31/2022
ACLS certification – 01/31/2022
AWHONN Advanced Fetal Monitoring
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Professional Associations

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American Midwifery Certification Board
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References

Available upon request