

An Exploration of Milk Expression
in the Agricultural Workplace

by

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ABSTRACT

Breastfeeding is considered the optimal source of nutrition for infants because of the protection it offers against many adverse maternal and child health consequences. The greatest health benefits are associated with exclusive breastfeeding, but employees must often return to work before establishing a full milk supply. Although federal and California law mandate space and time provisions for workplace lactation accommodation, women employed in manual labor jobs, including agricultural field work, face challenges to expressing (pumping) their breast milk. Mexican-descent women, who represent more than a quarter of the California farmworker population, are particularly at risk for supplementing their breastfed infants with formula. Using a socio-ecological model (SEMBA) to guide the research process, this qualitative case study examined the experiences of five Mexican immigrant women who expressed their milk in the California agricultural workplace. The investigator conducted semi-structured interviews to explore how each level of SEMBA influenced their decision to initiate and then continue pumping in the field. Sociodemographic questionnaires were also completed for each participant. Qualitative content analysis led to the discovery of three themes: *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail*. Enabling factors for milk expression in the workplace were found at all levels of SEMBA, except for the work environment. At the individual level, self-efficacy, strengthened by social support (interpersonal), was a major contributor to continuance of milk expression. Significant challenges were found at the interpersonal (coworker) and work environment levels, represented by the theme of *Running the Gauntlet*. Social support at the interpersonal level was provided by family members, child care providers, and WIC breastfeeding peer

counselors and buffered the hardships of the workplace. Community level enablers included cultural values, reflected by the theme of *Honoring Culture*. Trusting in the (lactation) law at the systems level was mentioned by all study participants as a facilitator for workplace milk expression within the theme of *Blazing a Trail*. Improved understanding of the factors that enable or challenge success at milk expression on the job may lead to appropriate interventions that support optimal breastfeeding, especially among employees in agriculture or other manual labor jobs.

More than a decade ago, my husband, Curtis, and four children, Hailey, Joaquín, Tori, and Lilly, encouraged me to go back to school. Almost thirty years had passed since achieving my master's degree, but they knew better than me that this PhD journey was something I needed. Throughout my years of doctoral study, one or more of my children were in college at the same time as I, finishing their first or second or even third degree. We are a family who loves learning! I dedicate this dissertation to my family, especially to my husband, who always had more faith in me than I had in myself.

I also dedicate my dissertation to all the mothers who wake up before dawn to prepare food for their families, and then work all day in the fields so they can put food on the table for the rest of us.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER	
1 BACKGROUND AND INTRODUCTION.....	1
Breastfeeding Levels the Playing Field	1
Mexican Farmworkers in the United States.....	3
Rationale and Significance.....	7
Definition of Key Terms	8
Specific Aims and Research Questions	11
2 THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE.....	12
A Socio-Ecological Model of Breastfeeding.....	12
Introduction to Review of Literature	14
Levels of SEMBA	15
Centering Mexican American Infant Feeding Practices	39
Breastfeeding Practices of Farmworkers in the U.S.....	52
3 METHODS	54
Case Study Design.....	54
Setting	58
Sample.....	58
Data Collection	62
Data Management	66

CHAPTER	Page
Data Analysis and Synthesis	67
Issues of Trustworthiness	74
4 FINDINGS AND DISCUSSION	79
Introduction.....	79
Identification of Categories and Themes	80
Sociodemographic Description of Sample	82
Within-case Analyses	84
Cross-case Analyses: Differences and Commonalities by Theme	104
Summary	112
5 CONCLUSIONS AND RECOMMENDATIONS	114
Interpretations of Findings by SEMBA Level and Interrelatedness of Themes.....	116
Implications for Nursing and Health Innovation.....	145
Limitations	152
Dissemination	157
Summary	158
REFERENCES	160
APPENDIX	
A METHODOLOGICAL APPENDIX	182
B STUDY FLYER.....	186
C INFORMED CONSENT FORM	188
D SOCIODEMOGRAPHIC QUESTIONNAIRE	191

APPENDIX	Page
E INTERVIEW GUIDE	194
F CONTACT SUMMARY FORM	197
G INITIAL CODING MANUAL	199
H REVISED CODING MANUAL	204
I MATRICES FOR SUB-QUESTION 2	217
J INSTITUTIONAL REVIEW BOARD APPROVAL	224

LIST OF TABLES

Table	Page
1. Summary of Levels of SEMBA	39
2. Sociodemographic Characteristics of Study Participants	83

LIST OF FIGURES

Figure	Page
1. Socio-ecological Model of Breastfeeding for Agriculture	13
2. Luchadora and Her Child	119

CHAPTER 1

BACKGROUND AND INTRODUCTION

Breastfeeding Levels the Playing Field

Breastfeeding is considered the optimal source of nutrition for infants because of the protection it offers against many adverse maternal and child health consequences. Organizations across the globe promote improvements in the initiation, intensity, and duration of breastfeeding among families from all cultures and income strata. Breastfeeding is the greatest of health equalizers, according to James Grant, former executive director of United Nations International Children's Emergency Fund (n.d.):

Breastfeeding is a natural safety net against the worst effects of poverty. If a child survives the first month of life...exclusive breastfeeding goes a long way towards cancelling out the health difference between being born into poverty or being born into affluence.

Human milk is the only form of food and drink needed by most infants until 6 months of age when other nutritious foods are introduced to complement breastfeeding. The World Health Organization (WHO, 2021) and the American Academy of Pediatrics (Meek, Noble, & Section on Breastfeeding, 2022) recommend that breastfeeding continue until children are 2 years old and beyond, while most U.S.-based health organizations suggest at least one year (U.S. Department of Health & Human Services (USDHHS), 2011).

Exclusive breastfeeding, according to the WHO definition (2008), indicates the provision of only breastmilk, oral rehydration solution, and vitamins or medications, disallowing supplementation of non-human milk, water, or other non-medication fluids. The greatest health benefits for mother and child are associated with exclusive

breastfeeding, although any breastfeeding still bestows benefits in a dose-response effect, based on intensity and duration (Meek et al., 2022). For children, not breastfeeding is associated with increased risk of infectious disease during early childhood and the development of chronic illnesses such as obesity, type 2 diabetes, and asthma. Women who have never breastfed or have breastfed for short-term duration face a greater risk of type 2 diabetes, cardiovascular disease, breast and ovarian cancer, and other chronic diseases compared to women with a cumulative lactation experience of 12 months or more (Meek et al., 2022; Victora et al., 2016).

Unfortunately, only 43% of mothers in the United States exclusively breastfeed their babies for even 3 months (U.S. Centers for Disease Control and Prevention (CDC), 2015). In California, as in the rest of the country, about one-third of women in low-wage jobs are mothers, often lacking paid sick leave or job security (National Women's Law Center, 2014). As a result, breastfeeding women may return to work before they have established an adequate milk supply, which typically takes a minimum of 4 weeks (Marinelli, Moren, Taylor, & The Academy of Breastfeeding Medicine, 2013). Although the Affordable Care Act of 2010 (ACA) mandates space and time provisions for lactation accommodation and requires free coverage of breast pumps (USDHHS, 2015), women in manual labor jobs including farm work, have the greatest challenge to combining breastfeeding with employment when compared to women in other job types (Kimbro, 2006; Vaughan, 2015; Lubold, 2016).

Rates of breastfeeding initiation, duration, and exclusivity in the United States vary by ethnicity, race, and socioeconomic variables. Low-income Hispanic women initiate breastfeeding more often than their non-Hispanic White and Black counterparts

and are more likely to continue breastfeeding through the fourth month postpartum (Kitsantas, Gaffney, & Kornides, 2012). However, compared to mothers of all other reported ethnicities, Hispanics have an increased risk of supplementing their breastfed infants with infant formula (Holmes, Auinger, & Howard, 2011). This practice of combination feeding, known as *las dos cosas* among Spanish-speaking mothers, dilutes the beneficial role of breastfeeding in disease prevention (Meek et al., 2022) and may add to the health inequities encountered by Hispanic mothers and children. Although *las dos cosas* is routine among Hispanic mothers, the variability of breastfeeding practices of Hispanic subgroups within the U.S. needs to be considered due to significantly different duration rates between Puerto Rican and Dominican mothers versus women from Mexico, Peru, and Colombia (Chapman & Pérez-Escamilla, 2012).

Mexican Farmworkers in the United States

The U.S. Hispanic population is its largest minority group, comprising over 53 million, or 17% of the nation's population. Mexicans are overwhelmingly the largest origin group at more than 34 million, or 64% of U.S. Hispanics. Immigrants make up one-third of Mexican descent residents, and 13% of the U.S. population overall (López & Patten, 2015). Employment opportunity is the driving force behind the migration from Mexico to the U.S., indicated by the high workforce participation of Mexican immigrants. Despite their status as the largest immigrant group in the country, Mexicans are one of the most disadvantaged populations in terms of cultural and linguistic barriers, education, earnings, legal residency, and health access (Castañeda, Ruelas, Felt, & Schenker, 2011).

The demand for farm labor in North America is complex and fluid. Deteriorating economic conditions in Mexico, caused in part by the North American Free Trade Agreement of 1995, displaced many people, particularly Indigenous subsistence farmers, and forced them into northern migration to the United States to support themselves and the families they left behind (Holmes, 2013). Mexican immigrants make up 68% of the individuals employed as hired farmworkers in the United States, while 84% of California's farmworkers were born in Mexico. Nationwide, females make up 26% of farmworkers, versus 31% in California (US Department of Agriculture (USDA), 2022a; US Department of Labor (USDOL), 2022).

An accurate count of farmworkers is difficult to determine due to the seasonal nature of agricultural work, as well as to organizational differences in defining the agricultural workforce. The category of hired farmworker may include the archetypical farmworker who manually plants, cultivates, and harvests vegetables, fruits, nuts, field, and horticultural crops, but may also include livestock workers, supervisors, and managers (USDA, 2022a; US Bureau of Labor Statistics (USBLS), 2021). Other enumerations of agricultural workers may include individuals employed in forest product industry, dairies, and aquaculture (California Employment Development Department, (CEDD), n.d.). Some estimates of the agricultural workforce do not differentiate between seasonal farmworkers and other personnel that may include farm operators, technical service providers, and consultants (University of California, 2009). For this qualitative inquiry, the focus will be on non-supervisory hired farmworkers/agricultural workers that are employed for vegetable, fruit, nut, and horticultural crop production, and harvesting.

Over half of the farmworkers in the U.S. lack government authorization to work, and the proportion is as high as 70% in California (Kandel, 2008). This lack of documentation, along with language barriers, restricts access to care despite occupational and lifestyle factors contributing to health problems. Growing numbers of healthcare practitioners in the U.S. speak Spanish, but an increasing proportion of recent Mexican immigrants are from Indigenous communities that speak limited Spanish and have health beliefs and practices that differ markedly from the Western medical model (Mines, Nichols, & Runsten, 2010).

On the West Coast, as many as 20 to 40% of agricultural workers are Indigenous, sharing culture and language with one of 68 groups distinct from mestizo or ladino (mixed race) Mexicans. In addition to limited access to services in their own language, they face a lack of understanding and acceptability of traditional healing methods by providers. Cultural and linguistic challenges are exacerbated by the reluctance of farmworkers to self-identify as Indigenous due to fear of discrimination found both in Mexico and the United States (Holmes, 2013; Mines et al., 2010).

Health risks of farmworkers and their children.

Farmworkers often work by piece rate or for hourly wages on a seasonal basis and rarely earn leave time. Only 14 states require most employers to provide paid sick leave (National Conference of State Legislatures (NCSL), 2020). Many key farm states lack benefits for sick employees (NCSL, 2020) despite agriculture ranking among the most dangerous industries (USDOL, n.d.-b). Musculoskeletal injuries, infectious diseases, heat stress, depression and isolation, and skin afflictions related to sun, insect, chemical, and toxic plant exposure are common ailments for workers in agriculture. Chronic diseases,

including overweight and obesity, high blood pressure, and diabetes afflict farmworkers at above average rates (Connor, Lane, & Thomisee, 2010). Housing for farmworkers is among the most substandard in the nation. Structural, sanitation, and overcrowding issues further contribute to the poor health status of farmworkers and their children (Arcury & Quandt, 2007). In addition to the physical and psychological stressors encountered by male workers, such as long and strenuous work hours and separation from family, women in agricultural field jobs are often victims of sexual harassment (Waugh, 2010).

Newly immigrated Mexican women generally have better health than other immigrant and U.S.-born women, but this advantage disappears the longer they reside in the United States. For example, Mexican-born women with a high level of acculturation have a greater prevalence of overweight or obesity than other immigrant or U.S.-born non-Hispanic White women, and are more likely to develop chronic disease related to excess weight, including diabetes. It is not clear how much of these differences are attributable to lack of access to resources, language or cultural barriers, or a combination of factors, including poor dietary habits adopted in the United States (Castañeda et al., 2011).

The health of millions of children born to Mexican immigrant women is a public health concern as well. Despite entitlement to U.S. citizenship and its promise of healthcare access, the health status of Mexican-American children often reflects the disparities of their parents. Children of Mexican immigrants are half as likely to visit a doctor as children of U.S.-born non-Hispanic Whites, yet they experience more issues with overweight and diabetes (Connor et al., 2010). Obstacles to timely care include lack of information, language and transportation issues, lack of providers that accept public

health insurance, and fear of deportation by having undocumented parents (Castañeda et al., 2011).

Rationale and Significance

Much of the literature related to breastfeeding exclusivity and duration focuses on personal and family-oriented factors that impact feeding decisions. In this study, qualitative inquiry will be used to illuminate critical gaps of support at work and in the community. According to Creswell (2013), qualitative research empowers individuals to share their stories. The layers of context for female Mexican-descent agricultural workers include not only their ethnic culture but also the unique culture of agricultural work itself, largely unknown to U.S. mainstream society. There are very few articles in peer-reviewed literature addressing infant feeding practices of Mexican farmworkers, and virtually nothing about the experiences of women who attempted to express their breast milk in the agricultural workplace.

Employers, and even mothers themselves, may question the practicality and necessity of breastfeeding exclusivity for farmworking families despite the scientific evidence in favor of the effort. Researchers have demonstrated that Hispanic children, mostly of Mexican descent, have one of the highest rates of overweight or obesity in California and across the nation (California Department of Health Care Services, 2010; Ogden, Carroll, Kit, & Flegal, 2014), and face over a 50% risk of developing diabetes in their lifetime (Gregg et al., 2014). Improving breastfeeding exclusivity and duration rates can mitigate some of the risk for this vulnerable population (Gunderson et al., 2012; Shearrer et al., 2014). This qualitative research is significant because it explores the determinants of milk expression in the workplace for women engaged in a low-wage,

outdoor, manual labor occupation, a setting that has not previously been the focus of study. It is the hope of the investigator that lessons learned from this study can be generalized to breastfeeding workers in other manual labor and/or outdoor industries, including hospitality, landscaping, construction, and manufacturing.

Definitions of Key Terms

Hispanic and *Latino* are terms used to describe U.S. residents who identify as being of Spanish culture and trace their origin or descent from Mexico, Puerto Rico, Cuba, Central and South America, and other Spanish-speaking countries. Federal legislation mandates the collection and analysis of data for “Hispanic or Latino” or “Not Hispanic or Latino (U.S. Census, 2022).” For the purpose of this study, the investigator uses the term *Hispanic* only to reflect language used by the cited source materials.

Latino and *Latina* (feminine form) are used as descriptors in concordance with the source material, and when the investigator discusses people originating from Latino countries including, but not specific to, Mexico.

Mexican refers to a person from Mexico or a citizen of the U.S. who has at least one Mexican parent (México, 2022).

Agricultural workers/farmworkers refer to a class of employee defined by the USDA (2022a) as *hired farmworkers*, which include workers employed in field crops, and nursery production, including supervisors and hired farm managers. For this inquiry, only non-supervisory employees in plant crop production will be interviewed.

Migrant farmworkers are workers who travel a minimum of 75 miles during a 12-month period to procure agricultural employment. In California, about 33% of farmworkers are migrants (Strochlic & Rittenhouse, 2013).

Breastfeeding is defined as feeding the infant with their mother's own breast milk, for the purpose of this study. Breastfeeding is generally accomplished by giving the infant the mother's breast to suckle. Expressing one's own breast milk and giving the infant the milk in a bottle or other vessel will also be considered breastfeeding. *Lactation* and *breastfeeding* (human lactation) are often used interchangeably.

Breastfeeding duration is defined as the overall length of time the infant receives any feeds of breast milk and/or length of time the mother expresses her breast milk, whichever is longer, either with or without supplemental food. Duration of exclusive breastfeeding is defined as the time the infant has been given breastmilk only without supplemental foods and liquids, apart from the exceptions described below.

Exclusive breastfeeding indicates the provision of only breastmilk. No other liquid or solid is given to the infant. *Almost exclusive breastfeeding* allows for the feeding of vitamins, minerals, water, juice, or ritualistic feeds given infrequently in addition to breastfeeds (Labbok & Krasovec, 1990). For example, the use of herbal tea is recognized in Mexican culture as a treatment for illnesses in infants, including colic or diarrhea (Mennella, Turnbull, Ziegler, & Martínez, 2005; Wojcicki et al., 2011).

Full breastfeeding includes *exclusive breastfeeding* and *almost exclusive breastfeeding* (Labbok & Krasovec, 1990).

Partial breastfeeding denotes three levels of feeding: *high*, *medium*, and *low*. *High partial* indicates that more than 80% of feeds consist of breastmilk (Labbok & Krasovec, 1990).

Lactation is the production and release of milk by mammary glands (Taber's, 2013). The release of milk can be facilitated by an infant suckling at the breast, via

manual expression, or by a breast pump or any combination of methods. *Breastfeeding* is often used interchangeably with *lactation*, but one can produce and release milk without ever putting a baby to breast.

Lactation accommodation is provided when an employer affords a breastfeeding employee the minimum requirements of state or federal lactation law: a reasonable amount of break time to express breastmilk for the employee's child, and a reasonable effort to provide the employee with use of a room or other location for milk expression. This space should be private and in close proximity to the employee's work area and should not be a toilet stall (California Department of Public Health, (CDPH) 2021).

Cuarentena refers to the 40 days after birth and accompanying traditional practices adopted by many Latina mothers (Bunik et al., 2006).

Los dos or *las dos cosas* are Spanish phrases that refer to the practice of giving an infant both breast milk and formula (Bartick & Reyes, 2012; Bunik et al., 2006).

Milk expression is the release of milk from the breast, either through hand expression or by using a manual, battery, or electric-powered breast pump.

Token breastfeeding is minimal breastfeeding, when the breast is mostly used for infant comfort and is not a significant contribution to a child's nutritional intake (Labbok & Krasovec, 1990).

WIC, the USDA-funded Special Supplemental Nutrition Program for Women, Infants, and Children serves low-income pregnant, breastfeeding, and postpartum women, infants, and children up to the age of 5 years, regardless of immigration status (USDA, 2023).

This document uses the terms “woman,” “mother,” and the gendered pronouns “she” and “her” when referring to the breastfeeding/lactating employee. The author recognizes that there are other gender identities associated with people who lactate.

Specific Aims and Research Question

The purpose of this qualitative case study is to examine the experiences of Mexican immigrant women who attempted to express their milk in the California agricultural workplace. Using a socio-ecological model to guide the research process from question development to data analysis, the investigator will explore the multiple levels of influence on farmworkers’ breastfeeding practices. Improved understanding of the factors that enable or challenge success at milk expression on the job may lead to appropriate interventions that support optimal breastfeeding.

Research question: What is the experience of breastfeeding women with milk expression in the agricultural workplace?

Sub-questions:

- 1) Why and how do Mexican immigrant mothers decide to express milk in the agricultural workplace?
- 2) What are the factors at each level of the socio-ecological model that farmworking women perceive as enablers or challenges of returning to work, seeking lactation accommodation, and expressing milk in the workplace?
- 3) What are the needs of these mothers and their priorities for support at each level of the model?
- 4) How might resources be targeted to enable workplace milk expression for these mothers?

CHAPTER 2

THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

A Socio-Ecological Model of Breastfeeding for Agriculture

Case study methodology contributes to our knowledge of individual, group, organizational, social, political, and other related phenomena in diverse disciplines, including nursing (Yin, 2014). This qualitative case study will explore how the multiple realities of the socio-cultural world in which breastfeeding Mexican agricultural workers live and work are experienced and understood in their particular context, so that a pattern of meaning can be developed.

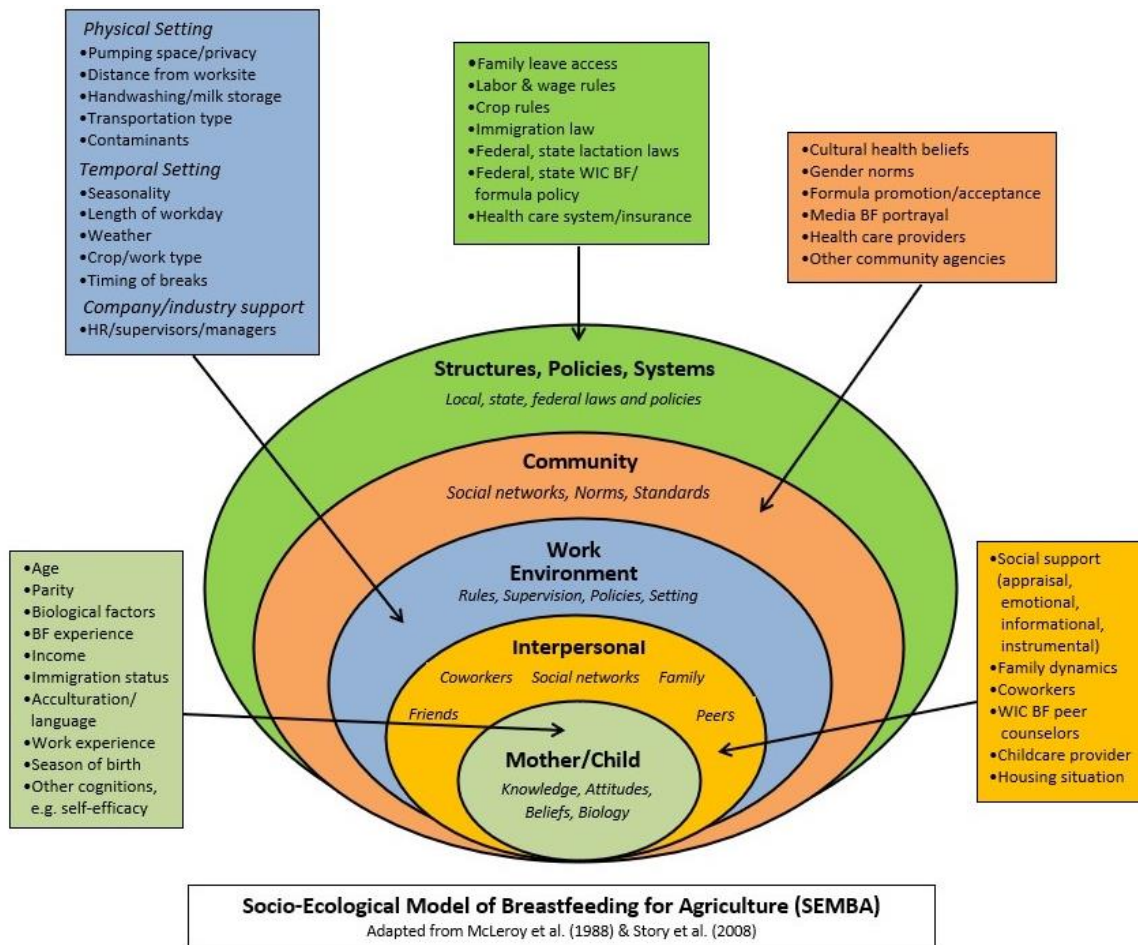
A socio-ecological model of breastfeeding will guide the research in an iterative process from research question, literature review, design, sampling, and data collection, analysis, and interpretation (Bloomberg & Volpe, 2016). In biological science, the term *ecology* describes the study of the relationships between organisms and their interactions with their environment, while ecological models of health behavior provide an organizing structure to help explain the sources and context of influencing factors, so comprehensive interventions can be developed. Unlike behavioral models that emphasize individual attributes, skills, and self-efficacy and the influence of family and friends, socio-ecological models (SEM) of health promotion also consider the broader environmental influences at the community, organizational, and policy levels. When individual behavior is facilitated by environmental support, healthy behaviors are maximized (Sallis, Owen, & Fisher, 2008).

Ecological models specific to breastfeeding extend the ecological systems framework described by Bronfenbrenner (1979) in addressing the multiple levels of

influence outside the mother-child dyad (Hector, King, Webb, & Heywood, 2005; Tiedje et al., 2002; U.S. Breastfeeding Committee (USBC), 2011). For this research proposal, a breastfeeding SEM specific to the contextual influences facing breastfeeding Mexican immigrant farmworkers was adapted by the investigator from models described by McLeroy, Bibeau, Steckler, and Glanz (1988) and Story, Kaphingst, Robinson-O'Brien, and Glanz (2008). Like other SEMs, the socio-ecological model of breastfeeding for agriculture, SEMBA (Figure 1), views individual behavior as shaped by and shaping social behavior on multiple levels.

Figure 1

Socio-ecological model of breastfeeding for agriculture (SEMBA)



Introduction to Review of Literature

Although recent literature recognizes the importance of the workplace environment in influencing decision-making about breastfeeding, to date there are no known studies exploring lactation accommodation in manual labor or in outdoor workplaces. The investigator seeks to understand how factors at various levels of SEMBA enable or challenge the success of milk expression and subsequently breastfeeding duration and exclusivity among farmworkers. To this end, she conducted a comprehensive literature review focusing on important influences at each level of SEMBA using the key words: breastfeeding, lactation, infant feeding, employment, workplace, Hispanic, Latino, Mexican, folk beliefs, *cuarentena*, socio-ecological model, agriculture, and farmworker. Additional articles were discovered using reference and citation lists. The review focused on literature from the last ten years, but older significant literature is included in order to present what is well-established.

Objectives of the literature review include:

- 1) to discuss the rationale for employing an ecological approach, using elements of feminist theory, social support theory, and role-conflict theory to collect and analyze data;
- 2) to center the breastfeeding Mexican immigrant farmworker within a socio-geocultural context;
- 3) to provide a brief review of the challenges the farmworking Mexican immigrant population faces regarding breastfeeding duration and exclusivity;
- 4) to review specific research that addresses the phenomenon of milk expression in the workplace.

Levels of SEMBA

Specific factors associated with each level of SEMBA are by no means exhaustive or mutually exclusive and are subject to revision as research proceeds. According to SEMBA (Figure 1) terminology, the *individual* level includes the mother and baby dyad, with breastfeeding practices influenced by sociodemographic and biological variables including age, acculturation level, biological attributes of both mother and child, and self-efficacy. The *interpersonal* level includes family, partner, coworkers, friends, WIC peer support, child care providers and other social networks and physical environments, such as housing situation. A level of influence specific to farmworkers is the *work environment*, including company policy and employment hierarchy, agricultural and labor organizations, and the physical and temporal characteristics of the worksite. The next sphere of influence on breastfeeding emanates from the *community*, including the media, healthcare systems, as well as overarching societal or cultural norms. The *structures, policies, and systems* level includes policies, legislation, and programs supported by local, state, and federal government, which influence exclusivity and duration of breastfeeding among the study population in some manner. For example, federal and state lactation legislation, WIC program guidelines, family leave requirements, labor, wage, and crop rules, and immigration policy are included at this level. Some SEM models might position company/industry support at this level, but the investigator chose to include it at the work environment level.

Individual (mother-child dyad).

This study will engage the participants as individual women first and foremost, but the focus is more about the environmental influences that shape their behavior.

Hausman (2004), a prolific writer on breastfeeding and feminism, acknowledges that certain practices of motherhood, including decisions around infant feeding, are not only a matter of personal “choice” as so often portrayed in U.S. society, but rather are framed by wider social, economic, and symbolic contexts. Key concepts of feminist theories that apply to women’s health research include the notions that (a) inquiry and practice begin from the perspective of women as actors and definers of their own experience; (b) feminist theories endeavor to change power structures that have historically been patriarchal; (c) acknowledgment that women act within the context of relationships; and (d) the goal of feminist practice is to change health promotion and care for all women, rather than just individuals (Andrist, 1997).

The principles of socio-ecological models are also consistent with the concepts of social cognitive theory, suggesting that creation of an environment favorable to change facilitates an individual’s adoption of healthy behaviors. Social cognitive theory posits that human behavior can be explained as a reciprocal interaction between behavioral, personal, and environmental factors (Sharma & Romas, 2012). Bandura (1977) explained that self-efficacy, a social cognitive theory construct, manifests itself as persistence in activities that seem intimidating, but through experience and mastery behavior change occurs. Most factors at the individual level of SEMBA cannot be readily changed, if at all, but self-efficacy can play a role in how successful a mother is at mastering breastfeeding and later expressing her milk at work.

Other individual but unmodifiable factors that are positively associated with breastfeeding duration include older maternal age, a foreign-born mother, and less time residing in the U.S. In some studies, parity has been associated with longer duration,

possibly due to its contribution to breastfeeding experience. Modifiable factors associated with longer breastfeeding duration among U.S. residents include living in a two-parent household, higher educational level, and a lower level of acculturation (Harley, Stamm, & Eskenazi, 2007; Haughton, Gregorio, & Pérez-Escamilla, 2010; Thulier & Mercer, 2009). However, it should be noted that studies conducted among mothers living in Mexico suggest a negative correlation between breastfeeding initiation, exclusivity, and duration and years of maternal education, although the trend seems to be reversing (Bueno-Gutiérrez & Chantry, 2015; Castrucci et al., 2008; González de Cosío, Escobar-Zaragoza, González-Castell, & Rivera-Dommarco, 2013).

There is a myriad of biological factors that impact the ability of mother or child to engage in sustained breastfeeding or milk expression. Insufficient milk is a problem that transcends international, cultural, and socioeconomic boundaries and is cited as the most common reason for weaning to infant formula. A thorough discussion of this complex issue is outside the scope of the current study but perceived insufficient milk production among Mexican mothers will be addressed in Chapter 2.

Interpersonal.

Mexican collectivist perspective values solidarity and emphasizes maintaining group harmony over the interest of individuals. It is expressed in strong interdependent kin relationships, encompassing extended family and neighbors, which promote the well-being of the entire group. On the other hand, mainstream European American culture tends to value individual rights and privileges over those of the group or family, an orientation described as individualism (Montgomery & Schubart, 2009). Adverse economic conditions in Mexico displaced many people and forced them into northern

migration to the U.S., many to work in the agricultural industry. Despite incredible obstacles, immigrants have established networks to support one another, and help build new lives on *el otro lado* (the other side) (Barajas, 2014).

In migration and settlement, collectivism remains a unifying concept. Social networks are instrumental in decreasing the costs and risks of travel, maintaining family connections, and facilitating settlement. Social networks, or the interdependent relationships among individuals, groups, and organizations (Sharma & Romas, 2012), provide immigrants with social support on both the interpersonal and community levels of SEMBA. Most women know someone in the U.S., usually other first-generation immigrants, who provided support in the process of migration, and they in turn help others. Social support is particularly important to the emotional health of Mexican-descent women with young children and plays a positive role in influencing infant feeding decisions (Ornelas, Perreira, Beeber & Maxwell, 2009).

Social support may influence health through behavioral, psychological, and physiological pathways, and is typically defined in research as positive emotional, instrumental, informational, and appraisal support that may occur naturally or be artificially created, as in the case of breastfeeding peer support programs (Heaney & Israel, 2008; House, 1981). Emotional support may be expressed through caring and encouragement, while instrumental support denotes assistance with material needs, including loans of money or goods, helping with child care, providing transportation, or the provision of WIC breast pumps or other breastfeeding aids. Informational support is giving information, advice, or guidance, while appraisal support is giving information that helps the process of self-evaluation (Heaney & Israel 2008).

Family and partner support.

A concept common to Mexican American culture is *familismo* (familism), a strong cohesion of nuclear and extended family characterized by loyalty and reciprocity, representing attitudes, behaviors, and family structures. The strong family cohesion of familismo offers social and economic advantages, including sharing responsibilities for child and elder caregiving, companionship for the disabled and lonely, improved financial stability, and communal problem solving (McMurry, Song, Owen, González, & Esperat, 2017). Many immigrant households include multiple generations sharing the same household, an arrangement that is associated with positive health behaviors, including lower levels of child abuse and acculturation stress, and greater likelihood of breastfeeding. For example, an infant's grandmother (maternal or paternal) may live in the same home or have daily contact with a new mother, providing support and advice (Bunik et al., 2006).

In Mexico, traditional gender ideologies are dichotomous: women are situated as caretakers of the home and family, tending to household chores and children, while men operate as heads of the family, responsible for protection and maintaining employment (Maternowska et al., 2010). After immigration to the U.S. with its higher cost of living, women face economic pressure to work outside the home. In California and other western states, agricultural field work is readily available regardless of documentation status. Families reconfigure themselves into dual-earner households to meet household obligations, send remittances home to relatives in Mexico, and save enough cash to get through the off season. Although traditional gender patterns might be duplicated as the family establishes itself in a new community, increasing gender equity often accompanies

women's employment. Changes in family roles can be difficult for men who are used to being the sole provider, while women struggle with less time for family relationships and child care work, including breastfeeding (Hohl, Thompson, Escareño, & Duggan, 2016; Maternowska et al., 2010).

Emotional support from the breastfeeding woman's partner and her mother or mother-in-law influence breastfeeding duration. Attitudes and beliefs of family and friends also contribute to breastfeeding duration rates, suggesting that interventions to increase breastfeeding duration should target relative caregivers as well as the parents (Bunik et al., 2006; Shim, Kim, & Heininger, 2012).

The physical environment surrounding the family can also influence breastfeeding practices. Mothers have confided to the investigator that they breastfeed less frequently due to privacy concerns resulting from crowded housing. In expensive housing markets like Monterey County, unrelated families frequently must share space to afford the rent (Villarejo, 2015).

Peer support.

Throughout history, women have turned to their peers for support and information during the perinatal period. Specific cultural practices often guided the care of a new mother by her network of family, friends, and neighbors of the same social set (Rossman, 2007). A qualitative study of Mexican American women demonstrated that having a family member or friend who breastfed was more common among mothers who breastfed for 6 months or more (Bunik et al., 2010). Authors of another study analyzing over 12,500 children from Mexico and Central America concluded only one group level factor, the influence of breastfeeding practices of other mothers in the community, had a

positive association with exclusive breastfeeding and breastfeeding past 6 months of age (Colombara et al., 2015).

Although informal mother-to-mother breastfeeding support diminished in the U.S. with the increasing medicalization of birth, it is experiencing a resurgence of sorts with formal peer support programs (Rossman, 2007). Formal peer support is provided by local women with breastfeeding experience, training in breastfeeding education, and the ability to collaborate with their peers in a culturally relevant context to improve breastfeeding outcomes (Chapman, Morel, Anderson, Damio, & Pérez-Escamilla, 2010). One formal effort, the WIC Breastfeeding Peer Counseling Program, is funded throughout the U.S. by USDA (2016). In an analysis of U.S.-based randomized trials evaluating breastfeeding interventions that targeted ethnic minority women, including Hispanics, Chapman and Pérez-Escamilla (2012) concluded that formal peer support programs were effective and should be part of a multifaceted effort to minimize breastfeeding disparities. However, none of the studies they reviewed specifically targeted women of Mexican-descent, nor addressed women in manual labor jobs.

Support of child care providers.

More than half of all mothers in the U.S. with children less than a year old are employed, most of them on a full-time basis (USDHHS, 2011). Child care providers can play a critical role in supporting breastfeeding mothers. A Colorado study assessing the infant feeding knowledge, attitudes, behaviors, and training of child care providers concluded that child care personnel need accurate, bilingual infant feeding information (Clark, Anderson, Adams, & Baker, 2007). Family members providing care also need assistance to support breastfeeding exclusivity and duration (Shim et al., 2012).

Licensed child care is regulated by each state and requirements may exist for breastfeeding support and training. California child care licensing regulations require a feeding plan for each infant, including the designation of breast milk or kind of formula (Cal. Code Regs. Tit. 22 § 101427). Care providers are reimbursed by USDA whenever they provide a meal to an infant in their care, whether the infant is fed formula, expressed breast milk, or is breastfed directly on site (USDA, 2017). By allowing mothers to breastfeed on site before or after work and feeding infants their expressed milk, the odds increase that breastfeeding will continue until at least six months postpartum (Batan, Li, & Scanlon, 2013). In addition, workers in California's licensed child care facilities are required to attend one hour of nutrition training, which must include information on breastfeeding (California Emergency Medical Services Agency, 2016). However, the investigator has learned from clients that many farmworking mothers cannot afford formal child care and depend on non-licensed relatives, friends, and neighbors to care for their children.

Coworker support.

Researchers found that interpersonal support for lactation is a necessary component for a positive workplace lactation experience (Witters-Green, 2003; Suyes, Abrahams, & Labbok, 2008; Bai & Wunderlich, 2013). Gabriel, Volpone, MacGowan, Butts & Moran (2020) describe the phenomenon of coworker sympathy and understanding as breastfeeding compassion, which buffers stigma and other negative aspects of the workplace. In a cross-sectional online survey of 1000 U.S. working adults, results indicated that female coworker support of other women plays an important role influencing the decision to breastfeed after returning to work and contributed to

breastfeeding self-efficacy. In the same study, three-fourths of coworkers reported support of lactation accommodation at work, but the remaining one-fourth revealed a perception of unfairness for giving women break time to pump. The stigma exhibited against lactating coworkers often took on the form of subtle verbal and non-verbal communication. Resentful colleagues considered the pumping of breast milk as unprofessional, and the time spent doing it as unproductive. Two-thirds of the disgruntled coworkers were men (Zhuang et al., 2018).

Women employed in agriculture endure working conditions embedded with sexual harassment and may find themselves the target of rude comments from both male and female coworkers (Waugh, 2010). Breastfeeding women have told the investigator they are reluctant to ask their supervisor for a place and time to pump due to fear of retaliation for requesting accommodation, although California employment law protects their job (CDPH, 2021). Even if the company provides accommodation, coworkers may criticize perceived special treatment for the pumping mother. In some work crews, the rewards of efficiency benefit the group and there is pressure to keep up the pace. The pay structure may reward productivity in other ways by paying workers a piece rate, based on how much crop they harvest. Many piece rate workers prefer not to take breaks, representing a loss of income, but rather choose to work quickly to maximize income (Strochlic & Rittenhouse, 2013).

Work environment.

Among low-income Latinas, employment is a major cause of premature weaning (Bunik et al., 2006; Harley et al., 2007; Hohl et al., 2016). For women in agricultural jobs, the challenges and perceived risks inherent in the physical environment are unique,

as in the distance to or availability of potential pumping locations. Unpredictable temporal factors, for example, the length of the work day and weather, further complicate milk expression issues. Numerous conversations over the years between the investigator and Mexican-descent farmworkers suggest that fear of exposing their children to dirt, pesticides, and other potential contaminants in the work environment via their breast milk and clothing is associated with early weaning. Exposure to sun and wind while working in the fields is believed to cause milk spoilage and digestive problems (*colicos*) for their baby. This culture-specific problem may necessitate pumping and throwing out the milk that accumulated in the body while at work. If unaware of their lactation rights, or unable or unwilling to express milk at work, many farmworking women employ strategies to decrease their milk production (“down regulate”) during the work day.

Only a few of the California agricultural companies contacted by the investigator prior to the study had written lactation policies. Having a policy communicated to all staff helps ensure that breastfeeding employees will have access to consistent support and helps define roles and responsibilities for employees and their supervisors. In this way, a worksite culture that normalizes lactation support is encouraged throughout the company (USDHHS, 2021). In January 2020, after study recruitment closed, new California legislation was enacted, requiring all employers to have a written lactation policy that states employees’ right to lactation accommodation, the process to submit a request, and how to file a complaint (CDPH, 2021).

Sexual harassment in the agricultural workplace.

The hierarchy of farm labor in the U.S. and Mexico leads to power imbalances compounded by the intersection of ethnicity, gender, and economic and legal residency

status. Farmworking women in a male-predominant work environment face above average risk of workplace sexual harassment (WSH) from coworkers and supervisors due to imbedded gender roles and inequalities (Prado, Rivera Heredia, Martinez Servin, Guzman, & McCurdy, 2020), further described in the following section.

A qualitative study of farmworkers' WSH experience conducted in California and Michoacan, Mexico suggested that regardless of age or marital status women faced harassment (Prado et al., 2020). Investigators interviewing a convenience sample of 150 farmworking women in California's Central Valley found that 80% of respondents experienced some form of sexual harassment on the job (Waugh, 2010). The persistence of WSH as an occupational hazard leads farmworking women to believe that reporting is useless because leadership covers for themselves. Women victims are often blamed, and they stay silent because of the shame and fear of job loss. The common sight of California women working in the fields with their faces covered (pre-COVID-19) was explained as a means to hide their youth from predatory coworkers (Prado et al., 2020).

While most sexual harassment in predominantly male domains such as agriculture entails gender or sex-based harassment in the absence of sexual advances, the resulting negative stress experienced by the victim is nevertheless a source of harm (Leskinen, Cortina, & Kabat, 2011). Gender harassment is the most common form of sexual or sex-based harassment and is behavior that "derogates, demeans, or humiliates an individual" based on their sex (Berdahl, 2007). The harasser acts to safeguard their own sex-based social status when it seems threatened through acts, comments, or materials used to provoke, silence, exclude, or sabotage the victim. They are able to accomplish their goal with the support of an ingrained social context that stratifies social status by sex.

Although men are most likely to harass women, there is male-to-male, female-to-male and female-to-female gender harassment (Berdahl, 2007). The latter situation may come into play, for example, if a woman who pumps at work is criticized by her female coworker who formula fed her baby and thus feels her sex-based status as an ideal mother is threatened. Any discussion of sexual harassment and lactation discrimination should include the victimization of mothers by any gender.

Lactation discrimination.

A report from the California Center for Worklife Law (Morris, Lee, & Williams, 2019) addresses discrimination in lactation. Breastfeeding or lactation discrimination takes on various forms including: the denial of pumping sessions needed to avoid discomfort and leaking breasts; firing or arbitrarily reassigning employees who ask for accommodation; denying access to privacy, thereby forcing workers to pump milk in front of coworkers and others in often unsafe circumstances; and comparing lactating employees to cows and mooing at them. Lactation discrimination not only leads to health consequences related to maladies on the mastitis spectrum but can also result in a reduced milk supply and unplanned cessation of breastfeeding. Lactation discrimination has been reported in many industries, but like sexual harassment in general, the problem is more widespread in male-predominant worksites and disproportionately affects low-wage workers (Morris et al., 2019).

Community and cultural norms.

Mexican gendered roles.

Mexico's patriarchal culture, linked to its history of oppression and colonization, led to stricter gender roles than found in the United States. Changes in traditional gender

roles evolved as immigrant women joined their male counterparts in the U.S. workplace, a shift discussed in the previous section on the interpersonal level.

Sociocultural expectations of female and male gender roles in Latino culture are referred to respectively as *marianismo* and *machismo*. The concept of marianismo is an expectation that Latinas will emulate *La Virgen* (Mary/Maria) and be a model of nurturing motherhood, be submissive to men, maintain dignified behavior, and be chaste, humble, and self-sacrificing without complaint. The woman is the spiritual pillar of her family. Historically, the right of the *marianista* to behave off-script has been regulated or punished by the forces of patriarchy. Although one might argue that many women have been socialized according to guidelines consistent with marianismo, it is still considered a Latino cultural value. There is limited research examining the construct of marianismo, especially in relation to gender roles in mixed-gender workplaces such as agriculture (Arredondo, 2002; Gibbons & Luna, 2015; Greer, Neville, Ford, & Gonzalez, 2013).

Machismo reflects positive as well as negative aspects of masculinity; attributes may include bravery, honor, dominance, sexual prowess, sexism, and reserved emotion (Mirandé, 1977; Niemann, 2004). It should be noted that there is movement in the literature (e.g. Arciniega, Anderson, Tovar-Blank, & Tracey, 2008) away from describing the negative attributes of traditional machismo to a more positive image of male gender roles, including chivalry, and providing for one's family (*caballerismo*). Machismo may be influenced by acculturation level; that is, the demonstration of machismo is higher among men with lower U.S. acculturation (Ojeda, Rosales, & Good, 2008).

Mexican-origin cultural beliefs of health and illness.

An individual's cultural, biological, historical, and political milieu is dynamic and

influences their beliefs of health and illness. Descriptions of cultural norms, though widely described in the literature, should be regarded as generalizations as each person incorporates multiple cultural values and norms into their identity throughout their lifespan.

Many traditional people of Mexican descent orient to an external locus of control and may believe that outside forces, including divine will, influence social and individual circumstances including health status (McMurry et al., 2017). *Fatalismo* (fatalism) is cited as a cultural belief that may discourage Latinos from engaging in various health preventive behaviors, including cancer and diabetes screenings (Abraído-Lanza et al., 2007). With a limited understanding of the concepts involved in the development of disease, as understood by Western biomedicine, individuals may choose to accept the inevitability of certain events. Health problems may be interpreted as punishment for God's displeasure with an individual, a loss of equilibrium in the body, or emanating from emotions or natural or supernatural forces (Abril, 1977).

Structural barriers may also contribute to immigrants' feelings of pessimism and fatalism due to the inaccessibility and discrimination often accompanying the Western model of healthcare (Abraído-Lanza et al., 2007). In terms of breastfeeding, fatalism has been described as an attitude that reflects acceptance of the status quo. For example, when faced with an impending return to work, a mother might feel formula use is unavoidable although she has been informed of other options (Bunik et al., 2006).

Folk health practitioners or *curanderos* provide a range of healing services for both physical and psychological problems, including culture-bound maladies. The term *culture-bound* illness or disorder refers to a pattern of symptoms that occurs among a

particular cultural group and is recognized by the group as an illness. Symptoms may be mental, physical, spiritual, and/or relational. Treatment of culture-bound, or folk illness, is known by persons of Mexican and Central American descent as *curanderismo*. Healing by a *curandero* incorporates spiritual and emotional components as well as the physiological aspects of health and is seen by patients as compatible with the U.S. healthcare system (Amerson, 2008).

Humoral theory.

A category of folk beliefs and medicine practiced throughout the world relates to the concept of humoral imbalance. Most European accounts of humoral theory trace its origins to the ancient Greek pathology of Hippocrates, advanced in the second century by Galen (Currier, 1966; Manderson, 1987). The classic system was based on the belief that four bodily fluids, or *humors*, must be kept in equilibrium or illness results. Basic functions of the body are believed to be regulated by the humors, each of which is differentiated by a combination of heat or cold, along with wetness or dryness: blood is hot and wet; yellow bile is hot and dry; phlegm is cold and wet; and black bile is cold and dry. Curing illness requires the correction of imbalances by adding or subtracting heat, cold, dryness, or wetness (Currier, 1966).

Humoral theory was translated into Arabic and refined in the medieval Arab world, adopted by Europeans with an infusion of Roman Catholic theology, and subsequently integrated with existing native Latin American practices during the colonial period (Currier, 1966). Mostly confined to the hot/cold dichotomy in modern times, and to a lesser degree, wet/dry, disagreement persists on how humoral concepts developed in the Americas. What is known is that Indigenous people in Latin America have been

exposed to various systems of healing introduced over the millennia, including influences from Europe, Africa, and Asia, and choose to incorporate new beliefs and remedies as they fit their evolving worldview. Humoral medicine helped them relate the health and nutrition of the body to their larger social and natural environment, with life cycles of human development and agriculture figuring into their understanding. Of interest to present day Western practitioners and researchers is how these evolving cultural notions may influence health behaviors in either a negative or positive manner, when viewed through the Western biomedical lens (Manderson, 1987; Messer, 2015).

On the other side of the world, medicine similar enough to the Greek paradigm to be characterized as humoral, developed independently in the ancient Chinese and Indian scientific traditions. Although born in antiquity, humoral theory remains contemporary as new cultural items are incorporated into its belief system. Although more familiar to the people of Latin America, Asia, and Africa, vestiges of humoral tradition persist in European and North American culture as well (Manderson, 1987).

In the humoral taxonomic system common to people originating in Latin America, foods, herbs, medicines, illnesses, and bodily conditions are characterized by degree of hot (*caliente*) or cold (*frío*, sometimes also referred to as *fresco*, or cool), inherent qualities which are independent of temperature. An individual's state of hot-cold may be determined by age, occupation, health status, or other temporary exposure of the body. Since the human body lacks an intrinsic property, it continually needs to be balanced to be healthy (Currier, 1996; García-Hernandez, Vibrans, Rivas-Guevara, & Aguilar-Contreras, 2015; Messer, 2015).

Usually, a body moves from a state of equilibrium to either a hot or cold state, but in some cases, one may pass directly from a hot to a cold state, a process considered dangerous to health as it causes the body to weaken. Remedies and therapies are formulated to cure the loss of equilibrium, manifested as illness (García-Hernandez et al., 2015). Most illnesses result from cold states, and therefore require a hot remedy to achieve balance. For example, chili peppers, onion, garlic, most grains, non-tropical fruits, oils, alcoholic beverages, and more desirable meats including beef and water fowl are hot foods that should be consumed while in a cold state. On the other hand, hot illnesses are treated with cold remedies, including consumption of most vegetables, tropical and juicy fruits, dairy products, corn, beans, and meats considered common, such as goat, fish, and chicken. Some foods have both hot and cold qualities, depending on preparation method (Currier, 1966; Santos-Torres & Vásquez-Garibay, 2003).

Stages in a woman's life related to reproduction are symbolized as hot or cold. Pregnancy and menstruation are considered hot states; hence, a pregnant woman should limit her intake of hot foods so the fetus will not get too hot. During birth, the mother loses a significant amount of heat and is considered very vulnerable to illness due to drafts or from eating cold foods. Breastfeeding mothers are admonished to avoid exposure to cold lest the flow of milk be diminished (Santos-Torres & Vásquez-Garibay, 2003; Waugh, 2011).

Loss of equilibrium may also be caused by certain behaviors. For example, a cold state can result from exposure to cold weather, frequent baths, or walking on the bare floor without shoes. A hot state can be caused from being exposed to the sun for a long period, eating too much *caliente* food, or through hard physical labor, including

agricultural work. In summary, women who strive for humoral balance, especially during their reproductive years, may find themselves making constant adjustments to maintain equilibrium (Messer, 2015).

Other Mexican cultural beliefs of health and illness.

Disease may also be attributed to natural forces, including moonlight, eclipses, cold, heat, wind, sun, water, or supernatural forces. For example, *mal de ojo* or evil eye is a common Latin American culture-bound malady most often afflicting children, particularly infants. The notion of the evil eye has existed for millennia, in far flung corners of the world. Believers hail from the Mediterranean countries of Europe, Arab and Semitic nations, Latin American locales influenced by Spanish and Portuguese culture, and India. Historical literature from Britain also speaks of the evil force of the eye, from *Beowulf* to Shakespeare's *Love's Labor Lost* (Berger, 2012). In its Mexican form, it is often caused unintentionally by an adult, usually a woman with "strong vision," staring at a child with admiration. This is said to weaken the child and cause bad luck and symptoms of excessive crying, poor appetite, fever, and diarrhea (Abril, 1977; García-Hernandez et al., 2015).

Throughout the ages, people of different nations developed various culturally approved methods to obstruct the evil eye. Children from Mexican-descent families might wear a good luck charm that can repel *mal de ojo*, or the person who is admiring a child might touch them to break the spell. Charms known as *ojo de venado* (deer's eye), consist of a large, dried bean strung on red tasseled cord (Ingham, 1970). Frequently worn around the wrists of infants, these charms are a common sight in the investigator's community and are easily purchased locally or on the internet.

Another group of folk illnesses is connected to emotion. *Susto* is commonly diagnosed among people of Latin American descent, and results in the soul or life force temporarily leaving the body due to a strong emotional experience, severe fright or stress, or encounter with the supernatural (García-Hernandez et al., 2015; Lemley & Spies, 2015; Weller et al., 2002). Symptoms attributed to *susto* may be physical or emotional, and may include poor appetite, crying, agitation, and insomnia. *Susto* may also make the body more vulnerable to disease. For example, some immigrants from Mexico consider *susto* to be a risk factor for diabetes (Lemley & Spies, 2015; Weller et al., 2002). Unborn children and breastfeeding infants may be susceptible to *susto* if the mother has it. There is significant variation in the etiology, presentation, and treatment of *susto*, with regional differences in symptoms and remedies. Treatment must be initiated to prevent further deterioration of health or even death, and might include home remedies such as prayer, massage, and medicinal herbs (Weller et al., 2002).

Susto is commonly mentioned to the investigator as a reason for sudden loss of breast milk production among Mexican-descent mothers. For example, a mother watched helplessly as her young child darted into the street, narrowly escaping harm, and reported that her milk “dried up.” Another strong emotion felt by breastfeeding mothers, anger or *coraje*, is thought to cause diarrhea or other illness in infants. Fathers of new babies may be admonished not to upset the mother so her milk will not be tainted (Bunik et al., 2006). Belief in transmission of maternal emotions via breast milk is found in other parts of the world, including the Middle East (Harrison, Zaghoul, Galal, & Gabr, 1993).

La cuarentena and other postnatal folk practices.

La cuarentena (quarantine) refers to the 40 days after delivery of a baby and the

accompanying traditional practices regarding diet, clothing, bathing, and sexual abstinence. Self-identified traditional Mexican women and their families characterize cuarentena as a time of vulnerability and special rules (Bunik et al., 2006; Niska, Snyder, & Lia-Hoagberg, 1998). Social support in the form of personal care and assistance with housework and child care are usually provided by the mother, mother-in-law, or grandmother. Fathers may temporarily take over home care activities usually performed by women (Niska, et al., 1998). The underlying belief is that the new mother's body is "open" and must be protected until it regains closure through specific cultural practices.

Behaviors to protect the open body include refraining from sexual activity and avoiding *el aire* (drafts) and *el frio* (cold, damp air). Aire, not just wind but a humor or essence, can enter the unprotected body and cause headaches, joint pain, and colds, and cause breast milk to dry up. The practice of covering the back of breastfeeding mothers to prevent aire or frio from entering their body is reported in the literature (Waugh, 2011) and frequently observed by the investigator at her office. Even in warm weather, adherents of cuarentena frequently wear multiple layers of clothing and place cotton in their ears to protect against aire. The battle against frio carries over to the infant, and families make certain windows are closed and the newborn is wrapped up. On the other hand, heat, or *el calor*, represents life force and is desirable. If a mother is to pass on her life-giving calor, she must stay warm (Waugh, 2011).

Special foods to increase milk production are offered to breastfeeding mothers, while foods associated with extremes of heat or cold, acidity, gas, or spiciness are avoided. Soups such as *caldo de pollo* (chicken soup) are encouraged during the postpartum period (Mennella et al., 2005; Waugh, 2011). *Atoles* (blends of milk, sugar,

and oatmeal, cornmeal, or nuts) are especially known for improving milk quality. Beans are the food most often avoided to protect the milk supply or prevent harm to the breastfed infant, followed by chile, cucumber, and nopales (Santos-Torres & Vásquez-Garibay, 2003).

Recently immigrated women may mourn the loss of the traditional practices and support of cuarentena, contributing to feelings of isolation in a new land. They also face conflict when health providers give advice contradictory to their cultural beliefs. Many women rely on their traditional knowledge to make sense of their health during postpartum recovery and infant feeding. Resigned to the limitations of Western medicine practitioners, they may choose to withhold information about what they plan to do at home after they leave the medical office or hospital (Waugh, 2011). To better meet the needs of the Mexican immigrant population, health professionals in the United States should conceptualize their health using a client-focused holistic model that emphasizes cultural context and integrates physical, mental, social, and spiritual well-being.

Support of Western healthcare providers.

Providers of maternal and child healthcare are in a unique position to positively affect breastfeeding exclusivity and duration yet underestimate the value of their support. Themes that emerged from a qualitative descriptive study of over 50 healthcare professionals providing care to women and their infants included: understanding the benefits, but often lacking breastfeeding knowledge; gaps between knowledge and clinical practice; and not knowing how to assess and help (Radzimirski & Callister, 2015). Physicians who are ambivalent about the superiority of human milk versus infant formula or feel they do not have the proper training may be unable to adequately help

their breastfeeding clients. Some providers use their own breastfeeding experiences rather than rely on evidence-based knowledge to make recommendations, which may lead to women receiving inappropriate information and weaning prematurely (USDHHS, 2011). Inadequate time allocated to appointments with breastfeeding dyads may further limit the health providers' involvement.

New strategies are being developed to bolster the outpatient support provided by the health care system, including the *9 Steps to Breastfeeding Friendly: Guidelines for Community Health Centers and Outpatient Care Settings* (CDPH, 2015). Guidelines in this document are being implemented in rural health clinics throughout California and may have a positive effect on breastfeeding support for farmworkers.

Media influence.

Spanish language media, especially television and radio, can be powerful allies in making the case for lactation accommodation. Farmworkers often listen to the radio on the way to work, while working, and at home. A Mexican study using radio messages to promote appropriate child feeding practices demonstrated improvements in breastfeeding frequency among the intervention group (Monterrosa et al., 2013). In the U.S., national mass media campaigns have been launched in Spanish to promote breastfeeding but are not specific to lactation in the workplace. Both English and Spanish-language television programming and print advertisement in the U.S. portray breasts as sexual objects and may lead immigrant women to believe they need to conceal breastfeeding in public (USDHHS, 2011).

Structures, policies, and systems.

Breastfeeding duration and exclusivity are affected by the length of parental

leave. A leave of six weeks or less after delivery is associated with four times the risk of failure to establish breastfeeding while a leave of 6 to 12 weeks is associated with twice the risk of breastfeeding failure, compared to not returning to work. The adverse effect of short postpartum leave on breastfeeding cessation may be stronger among women working in the inflexible or non-managerial jobs often found in agriculture (Guendelman et al., 2009). In California, most waged jobs require paycheck deductions for State Disability Insurance; eligible women may receive payments that average 60-70% of their usual pay for up to 14 weeks postpartum (CEDD, 2022). Still, some women in low-wage jobs find it necessary to return to work before breastfeeding is well-established.

Since passage of the ACA in 2010, U.S. federal statute requires paid break time and a private space for breastfeeding mothers, although some employment classifications including agriculture were exempted by the Federal Labor Standards Act (USDOL, n.d.-a) until rule changes in December 2022. Federal law also exempts employers with fewer than 50 employees, a qualification that may disproportionately affect low-income and minority women (Sparks, 2011). California is one of 30 states that have their own statute addressing lactation accommodation in the workplace (NCSL, 2022a). Although California did not have the same occupational exemptions as federal lactation law, the state exempts businesses for which accommodation would result in an unreasonable burden. The California Labor Commissioner determines what is unreasonable should a complaint be filed by a mother (CDPH, 2021). Relative to non-Hispanic Whites, Mexican-American mothers living in states with laws protecting workplace milk expression are 30% more likely to breastfeed for at least 6 months compared to states without laws (Smith-Gagen, Hollen, Walker, Cook, & Yang, 2014).

The federally funded WIC program serves pregnant, breastfeeding, and postpartum women, infants, and children up to the age of 5 years. USDA Food and Nutrition Service allocates funding to U.S. states, territories, and tribes and they in turn fund local WIC programs. Food benefits are provided for predominantly breastfeeding women up to one year postpartum, whereas postpartum women who are not breastfeeding or provide less than half of their baby's meals with breast milk receive benefits for only six months. Fully or partially formula-fed infants receive formula until the age of one year, in addition to the commercial baby food all infants receive starting at 6 months of age. WIC families are encouraged to breastfeed their infants, notwithstanding a medical issue. All WIC staff are required to attend breastfeeding promotion training and provide the support needed by families to succeed. State and local WIC agencies are required by USDA regulations to create policies and procedures to ensure breastfeeding support is provided prenatally and throughout the postpartum period (USDA, 2021; USDA, 2023).

In summary, factors at each of the five levels of SEMBA, a socio-ecological model designed for the unique context of agricultural work, may enable or challenge milk expression among farmworkers.

Table 1*Summary of Levels of SEMBA and Factors that Contribute to Milk Expression at Work*

SEMBA Level	Factors influencing milk expression
Individual (mother-child)	Self-efficacy; sociodemographic factors; biological attributes; breastfeeding experience
Interpersonal	Social support of family and partner, peers, WIC peer counselors, child care providers, and coworkers
Work environment	Physical, temporal characteristics of specific workplace; crop/job type; company management/industry support
Community and cultural norms	Mexican-origin cultural beliefs of health/illness; gender norms; support by health care system; media influence
Structures, policies, and systems	Leave length and pay; labor and lactation law; federal and state WIC breastfeeding and formula policies; health care insurance benefits

Centering Mexican American Infant Feeding Practices

Infant feeding practices of Mexican immigrants in the U.S.

Child feeding styles and practices found in Mexico often persist when parents migrate to the United States, and reasons and risks for infant formula supplementation are strikingly similar between the two countries. Breastfeeding exclusivity rates in Mexico are among the lowest in Latin America (González de Cosío et al., 2013), while obesity rates are among the highest in the world (United Nations, Food and Agriculture Organization, 2013). In the U.S., children of Mexican immigrants also face low rates of exclusive breastfeeding and high rates of overweight and obesity. The prevalence of overweight and obesity among children aged 1-6 years in California farmworker households was higher than comparably aged children from an agricultural area in

Mexico. Although overall breastfeeding prevalence was similar, breastfeeding exclusivity rates were significantly higher in Mexico than California and mean duration was significantly longer for the Mexican sample (Vera-Becerra, López, & Kaiser, 2013).

Parental feeding style may influence the development of childhood obesity. Cultural feeding practices including responsiveness to real or perceived hunger and satiety cues have been associated with weight outcomes (Dancel et al., 2015). Obesity prevalence generally decreases as income increases, but among children and adolescents of Mexican-American descent, there is not a significant association between obesity and income level for either boys or girls (Ogden et al., 2014).

Obesity trends are particularly concerning for Mexican-descent infants. Longitudinal studies indicate that rapid weight gain during the first two years of life is associated with a greater risk of obesity throughout the lifespan. However, this accelerated growth is often seen by Mexican mothers as a sign that the child is eating well and in good health (Worobey, Islas-López, & Hoffman, 2008). The view that overweight babies are healthier is culturally embedded and accepted by parents, grandparents, and friends (Bernosky de Flores, 2010; Brotanek, Schroer, Valentyn, Tomany-Korman, & Flores, 2009; Cartagena et al., 2015; García, 2004; Ríos-Ellis, Nguyen-Rodriguez, Espinoza, Galvez, & García-Vega, 2015). Many parents mistakenly believe that formula supplementation is a means for babies to get all the vitamins and extra calories they need so they are healthier and *gordito* (chubby) (Bunik et al., 2006).

Although there is ample evidence that obesity coexists with food insecurity, the mechanisms whereby limited food resources may promote obesity in low-income Hispanics are poorly understood (Borre, Ertle, & Graff, 2010). The proportion of

Hispanic households experiencing food insecurity is more than double the proportion among households headed by non-Hispanic Whites. Food insecure families tend to consume foods that are calorie-dense but nutrient-poor. One study suggests that parents in homes with suboptimal food resources are less likely to follow recommended infant feeding practices, thereby setting the stage for early childhood obesity (Larson & Story, 2011).

Crying episodes are the best predictor of infant feeding frequency among Mexican parents, who tend to have a low tolerance for infant distress (Worobey et al., 2008). Bottle feeding from birth to toddlerhood and beyond has become a common solution to crying and whining (Brotanek et al., 2009; Bunik et al., 2006; Chaidez, Townsend, & Kaiser, 2011; Ríos-Ellis et al., 2015). In the case of working mothers, early introduction of formula feeding to breastfed babies was constructed as a strategy to prevent future suffering when the mother had to leave her baby with a caregiver (Horton & Barker, 2010; Vaughn et al., 2010; Waldrop, 2013). Work as a reason to formula feed was also cited in studies in Mexico (Rivera-Pasquel, Escobar-Zaragoza, & González de Cosío et al., 2015). Formula is required for cases of culture-bound contraindications to breastfeeding as well, including the tainting of milk by strong emotion, exposure to wind and cold air, violations of cuarentena, or perceived low milk supply (Bunik et al., 2006; Guerrero et al., 1999; Horton & Barker, 2010).

Along with decreases in breastfeeding intensity, bottle feeding among Mexican-descent families is associated with other health problems including a high rate of dental caries that can result in long-term health and psychological consequences, including infections, teeth malformation, and speech problems (Avila, Pordeus, Paiva, & Martins,

2015). Prolonged bottle feeding also increases the risk of anemia and associated behavioral, cognitive, and physiological outcomes, especially among Mexican American toddlers (Brotanek, Halterman, Auinger, Flores, & Weitzman 2005; Horton & Barker, 2010). Parents may not grasp the long-term complications of bottle feeding nor have the skills or fortitude to address the issue of weaning (Brotanek et al., 2009; García, 2004; Horton & Barker, 2010).

No tengo leche (I don't have milk).

A high prevalence of perceived low milk (PLM) is found among Hispanic women in the U.S. (Li, Fein, Chen, & Grummer-Strawn, 2008) and in Mexico (Sacco, Caulfield, Gittelsohn, & Martínez, 2006). In fact, many mothers, including California farmworking women, describe their breast milk as “inadequate,” a word that can be considered a metaphor for their lives (Chin & Solomonik, 2012). Although a very small percentage of women are physically unable to exclusively breastfeed, the perception of low milk supply is reported as the most common reason throughout the world for early supplementation or cessation of breastfeeding (Sacco et al., 2006). Although clinical evaluations are rarely done (Bunik et al., 2006), mothers' attention is focused on the failings of their own bodies, rather than the shortcomings of social systems that do not support effective lactation management.

Mexican mothers identify crying as the main symptom of PLM, and an indication the baby is still hungry or is refusing the breast. Inadequacy of their diet and fluid intake are often considered by women to be the cause of their PLM, and consumption of cultural foods such as *atoles* is a favored strategy to increase milk supply. However, responding to PLM with formula supplementation is the most common solution among Mexican

mothers (Sacco et al., 2006). Like other low-income women who find themselves managing the risks of sub-standard housing, inadequate child care, violent neighborhoods, poor transportation, and lack of health care access, many Mexican mothers believe that supplementing with formula poses an insignificant health risk by comparison to the other hazards of life (Chin & Solomonik, 2012; Sacco et al., 2006).

Formula promotion in the U.S. and Mexico.

The availability and perceived promotion of free formula provided to low-income mothers by the WIC program is often mentioned as a reason for mothers to supplement their breast milk with commercial infant formula (Borre et al., 2010; Bunik et al., 2006; Hohl et al., 2016; Horton & Baker, 2010; Reifsnider, Gill, Villareal, & Tinkle, 2003; Vaughn et al., 2010). In fact, more than half the commercial infant formula consumed in the United States is provided free to families through WIC (Kent, 2006).

Based on the maximum monthly allowances of WIC food packages (USDA, 2022b), and published internet prices from three national chains, the investigator found the 2022 monetary value of the contracted powdered formula to be approximately \$18 per 12.4-ounce can, or the equivalent of \$162 in benefits, for fully formula-fed babies under 6 months old who do not have extenuating health issues. If a specialty formula is recommended by the physician, for example for babies with cow's milk sensitivity, the price may approach \$36 per can. A breastfeeding mother also supplementing with formula may receive the equivalent of one to nine cans of powdered formula per month, depending on the age of her baby and how accurately WIC staff estimates the infant's formula intake. However, the value of the mother's own package decreases based on the amount of formula received.

It is not unusual for breastfeeding mothers who supplement their babies with formula to receive either too much or not enough formula from WIC in a specific month. The cash value of the most common combination packet, four to five cans of powdered formula and a “mostly” breastfeeding packet for the mother (*mitad y mitad*, or half breast, half formula), approximates \$60 per month higher than the exclusively breastfeeding packet. This perceived inequity may prompt families to ask for more formula than they plan to use before the next WIC appointment. The ease of receiving unnecessary formula from WIC may be the beginning of the downward spiral for the eventual abandonment of all breastfeeding (Kent, 2006).

In many cases, the request for extra formula from WIC is in anticipation of a return to farm work or other employment with limited pumping opportunities. However, the discrepancy in cash value between the exclusive breastfeeding packet and formula-containing packets may also entice breastfeeding mothers to request formula that can be used for currency. WIC staff often report hearing of formula for sale on radio flea markets or on craigslist.com and Facebook Marketplace at prices below retail. Several mothers who had recently moved to the U.S. from Mexico told the investigator that their settled compatriots told them to ask WIC for formula, although at the time they were not employed and were exclusively breastfeeding. The requirement that each WIC participant sign an agreement that they will not sell, trade, or give away WIC foods/benefits or face program sanctions is a debatable deterrent.

Formula marketing is pervasive in the health care system, including the provision of free formula and discount coupons to pregnant women at the obstetric provider’s office and laboratory. After the baby is born, the hospital and pediatrician’s office may

offer discharge packs and other inducements to formula feed (Dodgson et al., 2014). Formula feeding is further reinforced by the rarity of seeing women breastfeeding in public in the U.S. It is reported that formula marketing is also widespread in Mexico, where doctors are given incentives, including travel and entertainment, for prescribing formula and giving free samples to mothers (Bueno-Gutiérrez & Chantry, 2015).

Feminization of migration for waged labor.

Migration across the U.S.-Mexican border is framed in economic and increasingly gendered terms as researchers attempt to explain variations in migration experiences between men and women. As more women move into the work sphere and extend their social networks outside the home, research that was focused on male migrants has shifted. More women are now migrating independently for economic reasons, searching for a better life for their children and to escape violence, and crossing the border with the help of friends or smugglers (Castellanos & Boehm, 2008; Galarneau, 2013). However, female migrants usually earn less and are more likely to be employed in low-wage, unregulated jobs, placing them at higher risk for abuse (Gingrich, 2010).

Agriculture is treated differently than other industries at the national level, exempting workers from many protections and without the oversight of safety standards and worksite support. Until the recent passage of an amendment to the Consolidated Appropriations Act (2023), most U.S. farmworkers, salaried employees, and other Federal Labor Standards Act-exempt employees were not eligible for workplace lactation accommodation (USDOL, n.d.-a). Some states, including California, already provide greater health-related protections than mandated by federal law. However, many female agricultural workers still face a myriad of occupational and environmental hazards and

are often ineligible for health insurance due to a lack of authorization to live and work in the U.S. If they are migrant farmworkers, their status makes them particularly vulnerable to the lack of consistent health care (Arcury & Quandt, 2007).

Women in manual labor jobs are not unlike other women in the paid work force, shouldering the responsibility for children, family, and domestic chores. This “second shift” of labor is in addition to the already substantial amount of physical labor required for agriculture. Before migration, women from rural communities spent most of their time on household tasks, tending animals, and caring for and breastfeeding their children, and sharing in agricultural work during harvest time. In the United States, more family members are employed in waged labor to make ends meet, and relatives that can help with child care do not necessarily live nearby. Since children are not usually allowed at the worksite, except in the case of farm owners or sharecroppers (Sánchez, 2013), families have changed the gendered division of labor. Men may learn to do household chores and other labor that was considered women's work. Both parents may work and take opposite shifts so that family work can be shared (Stephen, 2007).

Breastfeeding and employment in the U.S.

The proportion of employed mothers in the U.S. workforce has increased considerably in the last several decades. In 2021, 61% of U.S. mothers with infants less than a year of age were actively working or looking for work (USBLS, 2022). Despite the widely-recognized benefits of breastfeeding, mothers employed outside the home generally have lower rates of initiation and duration of breastfeeding than non-working mothers (Mandal, Roe, & Fein, 2010). Building on feminist theory, Lindberg (1996) used the theoretical perspective of role conflict to characterize the discord breastfeeding

women feel as they struggle to succeed both as “good” mothers and wage earners. Separation of roles for employed breastfeeding women is not possible since the family role (breastfeeding) must be physically and mentally brought to the workplace. Higher levels of conflict between roles increases the likelihood that a mother will not initiate breastfeeding at all, abandon breastfeeding once she returns to work, or continue breastfeeding but not return to work (Lindberg, 1996; Mandal et al., 2010).

Women who have longer maternity leaves, work fewer hours, and have lactation support programs in the workplace tend to have higher rates of breastfeeding initiation and duration. Although U.S. legislation provides for up to 12 weeks of unpaid, job-protected maternity leave, taking extended time off without pay is not a viable option for many low-income mothers (USDHHS, 2011). Of 185 countries and territories surveyed worldwide, only the United States and Papua New Guinea do not mandate paid maternity leave at the national level (International Labour Organization, 2014). Individual organizations and companies in the U.S. may choose to offer paid leave, but just eight states and Washington D.C. have legislation in place for paid family and medical leave insurance programs (NCSL, 2022b).

California was the first state to pass a paid family leave law in 2002, funded through employee-paid payroll taxes (NCSL, 2022b). Built on the already existing state disability program, eligible employees may receive an additional eight weeks of paid family leave (PFL, also known as “baby bonding”) anytime within the first year after the baby’s birth. This benefit is in addition to the six weeks of post-delivery disability payment (eight weeks for Cesarean delivery). After implementation of PFL, exclusive breastmilk feeding rates increased 3-5%, and overall breastfeeding rose 10-20% (Huang

& Yang, 2015). Family-friendly policies and structural support represent mechanisms to promote gender and health equity by ensuring that women are not forced to choose between their families' health and economic independence.

Feminist scholars conceptualize breastfeeding as an important aspect of embodied motherhood (Boyer, 2014), recognizing that certain practices, including methods of infant feeding, are influenced not just by individual choice but as part of an ecological system. Barriers to combining breastfeeding with paid labor are found at all levels of socioeconomic strata and include discrimination in hiring and promotion, lack of coworker support, lack of privacy, longer hours to accommodate pumping, discomfort with full breasts, and refusal of child care workers to accommodate nursing mothers and to handle their breast milk (Johnston & Esposito, 2007).

A lawsuit dubbed "The Great Texas Lactation Case" by the media involved a woman who claimed she was fired from her job at a debt collection firm for requesting accommodation to pump her milk at work. A federal judge ruled that lactation was not a pregnancy-related condition and found in favor of the employer (USBC, 2014). The U.S. Equal Employment Opportunity Commission (2013) appealed the decision, citing sex and pregnancy discrimination, and the employer settled on the eve of the trial (USBC, 2014). Because of this case, California passed an amendment to the Fair Employment and Housing Act that specifically designates breastfeeding or medical conditions related to breastfeeding as protected categories under "sex" in terms of seeking, obtaining, and holding employment (CDPH, 2021).

After controlling for sociodemographic and birth-related variables, women provided workplace accommodations in the form of break time and private space were

over twice as likely to breastfeed exclusively at 6 months postpartum compared to mothers without accommodation (Kozhimannil, Jou, Gjerdingen, & McGovern, 2015). Through interpersonal communication with coworkers, human resources, and supervisors, employees negotiate and experience breastfeeding in the workplace and learn whether and how employer support will be provided (Anderson et al., 2015).

Pumping in the USA.

A mother feeding her infant directly from the breast throughout the day is the best strategy to promote breastfeeding exclusivity and duration and maternal-child bonding (USDHHS, 2011), but many employment situations, along with a lack of governmental support, discourage breastfeeding at the worksite. However, ACA regulations mandating workplace accommodation for milk expression and the provision of breast pumps by health insurers and the WIC Program afford more women the option of combining lactation with employment.

Breast pump technology and usage has exploded in the years since ACA took effect. Pumps are available in a variety of types and models including manual, electric and/or battery-powered. Electric pumps are generally categorized into two categories: multi-user, often characterized as hospital-grade, and single-user or personal pumps. Personal pumps have especially increased in popularity, especially for working mothers. Manufacturers advertise the quietness and discretion of their products as features attractive to women pumping in the workplace, who often face the anxiety of finding adequate space and time for an activity that is expected to remain hidden from view (Boswell-Penc, 2007).

Some scholars ascribe breast pumps as a feminist technology increasing infant feeding choices and maternal independence, but cultural attitudes toward breastfeeding and milk expression in public, racial and class disparities, and the geographic and built environment of many low-wage workplaces constrain their potential (Boyer, 2014). For women compelled to return to work soon after giving birth and then juggling care-work before and after their wage-work shift, the extra labor and angst generated by pumping may tip the balance in favor of formula feeding.

Despite ACA requirements that non-exempt breastfeeding workers must be provided with reasonable break time and private space to express breast milk, only 59% of women who returned to work postpartum had adequate break time to express milk, 45% were granted private space, and just 40% had both accommodations (Kozhimannil et al., 2015). There is conjecture that as ACA increases milk expression in the workplace, a two-tiered system of breastfeeding access might emerge whereby employers provide generous accommodations to mothers of higher socioeconomic strata and exert social pressure on low-income women to breastfeed, without substantially improving their ability to do so (Ehrenreich & Siebrase, 2014). In fact, low-income women and single mothers are markedly less likely to have access to either private space or break time to express breast milk in the workplace, reflecting the socioeconomic patterns of breastfeeding in the U.S. (Kozhimannil et al., 2015). The investigator witnessed examples of this inequity on two different occasions while touring agricultural processing plants. Company representatives indicated private offices were available to breastfeeding workers. However, it became clear that the lactation space was designed for use by office workers, while the needs of processing plant and field workers were not considered.

Intention to breastfeed, or to pump breast milk at work, is fueled by attitudes, subjective norms, and perceived behavioral control. Among Hispanic mothers in the U.S., perceived behavioral control was the major predictor of breastfeeding. The ease of pumping breast milk conveyed through employer lactation policies, access to low-cost or free pumps, culturally appropriate education materials, and Spanish language peer and lactation consultant support provide a sense of control that empowers women to continue breastfeeding (Bai, Wunderlich, & Fly, 2011).

Pumping experience in Mexico.

Studies conducted in Mexico in urban areas indicate that an almost universal lack of breastfeeding facilities at worksites contributes to breastfeeding cessation (Navarro-Estrella, Duque-López, & Trejo y Perez, 2003; Rivera-Pasquel et al., 2015). Formal employment has devastated breastfeeding exclusivity and duration in Mexico, whereas unemployed women or those in informal employment breastfeed their children for longer durations (Rivera-Pasquel et al., 2015). After PLM, the main reason among Mexican women for discontinuing exclusive breastfeeding was outside employment (Cadima, Jiménez, Pontones, & Gutiérrez, 2014).

Although Mexican women in formal employment are entitled to breastfeeding breaks during work hours, the challenge of bringing the baby to the worksite causes many mothers to forego the breaks and go home earlier. Pumping in the workplace is rare due to a lack of familiarity and affordability of breast pumps (Rivera-Pasquel et al., 2015). Information on breast pump usage in Mexico is limited, but one study evaluating manual pumps for use by mothers of preterm babies was reviewed. Although electric pumps are routinely recommended for milk expression in the U.S., the expense makes them

unaffordable for most of the Mexican population (Bernabe-García et al., 2012). Even if manual pumps are less expensive, there is time-based conflict as manual pumping generally requires more time and exertion.

As ACA requirements contribute to the development and distribution of an increasing number of affordable electric breast pumps in the United States, pump options will most likely improve for women residing in Mexico as well. The ready availability of electric pumps for mothers enrolled on health insurance in the U.S., including through Medicaid, has already resulted in international sharing of resources between mothers, according to the investigator's informal sources.

Breastfeeding Practices of Farmworkers in the U.S.

Literature on the breastfeeding practices of Mexican immigrant farmworker women in the United States is limited, although efforts to support them and their employers to improve worksite lactation accommodation have intensified at the local and federal level (Griffy, 2013; USDHHS, 2021). In a study that specifically addressed breastfeeding among women living in seasonal farmworker households in California, De La Torre and Rush (1987) discovered that mothers who practiced *cuarentena* were more likely to breastfeed, while outside employment decreased the probability. In fact, in California's Salinas Valley farmworking women are 50% more likely to quit breastfeeding than their unemployed counterparts (Harley et al., 2007), a conclusion confirmed by a survey of over 3700 WIC participants in the same region. Women in the survey also indicated a less favorable attitude toward the idea of lactation accommodation at the worksite than their non-farmworker peers (Vaughan, 2015). Mothers interviewed

for a qualitative study conducted in rural Washington explained that farm work is particularly unsuitable for extended breastfeeding duration (Hohl et al., 2016).

Mothers employed in seasonal agriculture often return to work when their infants are only 6 weeks old or sometimes younger, particularly during the peak harvest time, increasing the odds they will offer *las dos cosas* or completely quit breastfeeding. Farmworkers rarely have access to adequate facilities for breastfeeding or milk expression (Strochlic & Rittenhouse, 2013). Overall, many companies in various industries are ignorant of lactation accommodation laws and how to implement them (Stewart-Glenn, 2008), and the investigator has witnessed firsthand this lack of knowledge among supervisors in the agricultural industry. Farmworking mothers have communicated to the local WIC employees their reluctance to ask for time and a place to express milk at work for a variety of reasons including anxiety based on their lack of U.S. work authorization, privacy concerns, a wage structure that discourages break time (e.g., piece rate), fear of pesticide residue, and cultural beliefs that discourage breastfeeding after exposure to wind or temperature extremes. Some women that obtained support from their crew leaders to pump their milk quit prematurely because of coworker resentment and harassment.

There is no evidence in the literature of the experiences of farmworking women expressing breast milk while at work. The aim of this exploratory qualitative case study is to explore in detail the enablers and challenges faced by trailblazing mothers who have decided to pump their milk in an agricultural setting.

CHAPTER 3

METHODS

Case Study Design

Since the passage of federal legislation in 2010, numerous studies have focused on the issue of lactation accommodation in the workplace but virtually none address the unique circumstances of women employed in agriculture or other outdoor, manual labor jobs. A qualitative multiple case study design was employed in this research to explore the multiple realities of mothers attempting to combine breastfeeding with farm labor, with an eye to uncovering enablers and challenges to success at each level of SEMBA.

Qualitative research has a long and storied history of examining social justice issues that attend to “inequities and equality, barriers and access, poverty and privilege, individual rights and the collective good, and their implications for suffering” (Charmaz, 2011, p. 359). To this end, the qualitative researcher empowers study participants to share their experiences with the phenomenon of interest, and through their voices, knowledge is revealed. The final report reflects the participants’ story, but also reveals the investigator’s reflexivity, or self-consciousness of bias, values, and experiences brought to the study (Creswell, 2013).

Although the case study is most often associated with qualitative inquiry, it can be either qualitative, quantitative, or mixed methods. When used qualitatively, it can be a powerful strategy for comprehensive understanding of a phenomenon. Case study as a research method has been increasingly recognized as a challenging yet valuable research method across a broad range of practice, behavioral, and social science disciplines, including nursing (Sandelowski, 2011; Yin, 2014).

A universal definition of “case study” is challenging due to various interpretations among researchers, for example, whether it is a separate qualitative methodology or if cases are distinguished by a temporal focus rather than historic (Creswell, 2013; Sandelowski, 2011; Yin, 2014). There seems to be general agreement though, that case study is desirable when the main research question asks “how” and “why” (Yin, 2014) and intensive study of “one or more cases for some explicit purpose is desired” (Sandelowski, 2011). For this author’s purpose, “case study” is considered both the process of inquiry while studying the case, as well as the final product (Sandelowski, 1996).

In case study research, the investigator defines a case that can be limited within specific parameters (“bounding the case”) and examined using multiple sources of evidence, which may include interviews, observations, documents, and audiovisual materials (Creswell, 2013; Yin, 2014). Case studies typically investigate and present original research about topics for which little is known (Gerring, 2004), as in lactation accommodation for farmworkers. Case study research is considered an appropriate option when an understanding of real-world cases and associated contextual conditions (e.g., physical and social settings) is desired, but phenomenon and context may not be readily distinguishable (Miles, Huberman, & Saldaña, 2014; Yin, 2014). Case studies are particularly useful when inferences tend to be descriptive versus causal and the research strategy is exploratory, rather than confirmatory (Gerring, 2004).

A hallmark of case studies is the investigation of a small number of cases, or even one, but the number of variables analyzed is large (Yin, 2014). In this multiple case study, the investigator first analyzed patterns within each individual case and then across

cases, thereby illuminating both uniqueness as well as the commonalities and differences among them (Baxter & Jack, 2008; Gerring, 2007). By analyzing across cases, generalizability or transferability to other contexts was enhanced (Miles et al., 2014).

Throughout this process, the investigator constructed propositions that reflected findings of the within-case analysis, and then proceeded to cross-case comparisons to strengthen and refine the propositions (Evans, Coon, & Belyea, 2015; Sandelowski, 1996). Propositions are statements of opinion or suggestions of truth *proposing* a conditional event about the phenomenon of interest that can be tested against subsequent cases. Propositions are concerned with the connection between concepts, as numerous individual analytic observations were summarized and synthesized (Miles et al., 2014). Multiple case analysis also allowed for generalization through propositions to SEMBA. This generation and testing of propositions will be elaborated in Chapter 5.

Evidence was primarily uncovered through semi-structured interviews of individuals purposively selected to achieve maximum variation sampling, a strategy further described under “Sample size.” Quantitative descriptive data were also collected to evaluate sociodemographic characteristics of the participants, including age, parity, years of U.S. residency, previous breastfeeding history, history of breast pump usage, type of agricultural employment, and acculturation level. Literature accessed via academic journal databases and sources specific to agriculture were also used to illuminate findings.

The shortened version of the Short Acculturation Scale for Hispanics (SASH), (Marín, Otero-Sabogal, & Perez-Stable, 1987) was incorporated into the sociodemographic questionnaire (Appendix D). SASH is a commonly used metric that

allows for the quick and reliable identification of acculturation level of a variety of Hispanic subgroups, including Mexican Americans. The original 12-item scale contains three subscales: language use (Spanish/English), media, and ethnic social relations. The shortened four-item version of SASH is based on the language-related questions of the original scale, showing an alpha coefficient of .86 in the initial study (Marín et al., 1987).

According to Marín and Marín (1991), the shortened version of SASH does not compromise predictive value, validity, or reliability, but discerns between study participants with higher or lower levels of acculturation. Using the authors' instructions, this investigator averaged the response scores, ranging from 1 through 4, to each of the four indicated SASH language questions. An average score above 2.99 is the cut point delineating the more acculturated participants from the less acculturated. Individual and group level factors influence acculturation and SASH may assist in prediction of behaviors associated with child health, including breastfeeding duration (Sussner, Lindsay, & Peterson, 2009) and infant feeding style (Dancel et al., 2015).

Situating the investigator.

After over 30 years of working with farmworking women of Mexican descent as a nutritionist, lactation consultant, coordinator of a WIC breastfeeding peer counseling program, and as a working mother herself, the investigator is immersed in the issue of milk expression in the low-wage workplace. Due to family, social, and work relationships, she is also familiar with the fruit and vegetable growing and processing industry in California, including awareness of the varying degrees of lactation accommodation provided to workers. In qualitative inquiry, researchers acknowledge they are shaped by their own history and situation, and their interpretation is thus formed

(Creswell, 2013). An in-depth reflection of the investigator's journey to this doctoral dissertation can be found in the Methodological Appendix (A).

Setting

The study took place in Monterey County, California, a world leader in production and export of diverse crops, including strawberries, lettuce and other salad products, spinach, broccoli, wine grapes, and plant nursery products (Monterey County Agricultural Commissioner, 2022), all requiring intensive labor provided almost exclusively by Mexican immigrants (USDOL, 2022). Salinas, the county seat and population center (~156,000 residents), is the hometown of Nobel laureate John Steinbeck (1939), who wrote of the struggles and discrimination faced by migrant workers during the Great Depression in *The Grapes of Wrath*. The final scene of the book provides an allegorical image of breastfeeding as a life-sustaining act amidst the despair faced by the migrants portrayed in the book.

Study participants were recruited in Salinas through the Monterey County Women, Infants and Children Program (WIC). Of the city's employed residents, 24% work in agriculture and females comprise approximately one-third of the total (U.S. Census Bureau, 2016). WIC agreed to disseminate flyers describing the study and inviting participants to contact the investigator for screening (Appendix B). Once candidates were screened and selected for the study and informed consent obtained, they were interviewed at a location of their choosing in Salinas; options included their home or a private room at a local health clinic, the WIC office, library, or other public location.

Sample

In qualitative research, sampling involves the setting of boundaries to define

aspects of the case that connect directly to the research question. In this case study, the phenomenon of interest, milk expression in the agricultural workplace, was practiced by individuals belonging to what Miles et al. (2014, p. 30) would characterize as a subculture: low-income Mexican immigrant farmworking women. Low-income was defined as eligible for WIC, CalFresh (Food Stamps), or Medi-Cal (as Medicaid is known in California). In addition, study participants breastfed a U.S. born child for at least 6 weeks and intended, whether successful or not, to express milk in the U.S. agricultural workplace within the two years prior to recruitment. For this study, milk expression was defined as the removal of milk from the breasts using a manual, battery, or electric-powered pump, or by hand expression.

The recruitment strategy began with the referral of potential study participants to the investigator, by Monterey County WIC staff. During routine appointments, clients who seemed to fit the study criteria were asked if they were interested in participating in a project to discuss their experiences with milk expression at their agricultural job. If they expressed interest in participating, they were given a flyer describing the study and providing information on how to contact the investigator for more details. Although the investigator is employed by the WIC Program, she was not directly involved in promoting the study to potential participants nor was she ever responsible for determining their WIC program eligibility.

As phone calls from interested participants were received, the investigator spoke with them by phone in Spanish to screen for study eligibility. If they fit the study criteria, the investigator invited them to meet at a location of their choice to obtain informed consent, complete the sociodemographic form, and interview them.

Sample size.

Sandelowski (1995, p. 179) applies the Goldilocks approach to sample size in qualitative research: “adequacy of sample size...is relative, a matter of judging a sample neither small nor large per se, but rather too small or too large for the intended purposes of sampling and for the intended qualitative product.” Sample size in qualitative research is determined not only to study a few individuals but to collect rich detail about each of the chosen. The sample size required for a case study is suggested to be no more than four or five cases in a single study (Creswell, 2013), with fewer participants needed when more useable data is obtained from each participant (Patton, 2015). In this study, a sample of five was selected for participation.

Purposive, or non-probability, sampling is used in qualitative research to find information-rich cases. By purposefully selecting a wide range of cases to maximize different presentations of the phenomenon of interest, researchers can identify patterns in common. In maximum variation sampling, the investigator looks for outlier cases to document diversity by detailing multiple perspectives about the cases, and to determine if the main patterns that were uncovered still hold across the diversity (Creswell, 2013; Miles et al., 2014; Patton, 2015). Transferability of findings is enhanced when the investigator presents a rich description of diverse cases so readers can assess potential for their own settings (Miles et al., 2014). Seeking variation in the phenomenon of interest is also a strategy available to lone researchers to minimize the number of sampling units, while maintaining credibility (Sandelowski, 1995).

Although the population of Mexican farmworking mothers in California is mostly homogeneous, in terms of, language, ethnicity, nativity, and income, the study sample

represented different types of employers, from family-owned berry farms to multi-national corporations. Within agricultural employment, there are further differences in work experience, depending on the crop, job type (e.g., thinning, transplanting, harvesting, recordkeeping), and pay structure (e.g., crew vs. individual incentives). The inclusion of both typical and unusual participant and job characteristics helped to bolster confidence in the study (Miles et al., 2014).

Mothers who choose to pump at work and can successfully maintain their milk supply are unicorns. Thus, it took over 18 months to find suitable candidates for this study and then choose a mutually agreeable time and place to meet for interviews. Without the help of trusted WIC breastfeeding peer counselors reassuring mothers that the study was legitimate and helpful for the community, the investigator would surely still be looking for participants.

Inclusion/exclusion criteria.

Boundaries for the study established who would and would not be included for recruitment. Eligible for inclusion in the study were low-income immigrant women from Mexico who worked in California agriculture within the last two years, had fully or high partially breastfed U.S.-born children for at least 6 weeks, and had attempted to express breast milk in the workplace at least once. Exclusion criteria included: under the age of 18; born in a country other than Mexico; did not establish fully or high partial breastfeeding; and did not attempt to express breast milk in a California agricultural workplace. Breastfeeding definitions are found under *key terms* in Chapter 1. The investigator also excluded women who were born in Mexico but were not fluent speakers of English or Spanish, to avoid the difficulty and expense of procuring interpretation and

translation for Indigenous languages. At least 23 different Mexican Indigenous languages are spoken by California farmworkers (Mines et al., 2010).

Data Collection

Multiple methods of data collection were used by the investigator, a strategy that enhances data credibility (Patton, 2015; Yin, 2014). Face-to-face, digital voice recorded individual interviews were the primary method of collection, and sociodemographic data was collected for future verification and illumination. The two types of data converged during case study data analysis, providing a deeper understanding of the particulars of each case.

Informed consent.

The study protocol, including all relevant forms, was approved by the Arizona State University Institutional Review Board (IRB, Appendix J).

A bilingual, bicultural aide of Mexican descent who completed IRB-required human subjects training was present throughout the first consent and interview process and assisted the investigator throughout the study, as needed. The four subsequent interviews were conducted by the investigator alone due to scheduling issues with the aide. Per participant preference, all study materials were provided in Spanish. The investigator or her aide obtained informed consent, using an IRB-approved form (Appendix C). The investigator or aide read the consent form and the sociodemographic questionnaire (Appendix D) to the participant to avoid potential embarrassment or inaccuracy due to literacy issues. Once the forms were completed, the semi-structured interview was conducted in Spanish by the investigator or her aide. Interviews were digitally recorded by the investigator.

Participants were informed that taking part in the project was voluntary, and eligibility for public services to which they were entitled was not affected by their participation. They were informed of their right to resign from the study at any time without consequence. They were given the opportunity to ask questions, and a copy of the dated and signed consent form was provided to them. After participants agreed to enroll in the study by providing informed consent, they were asked to choose a pseudonym which was used for identification of both paper and digital files. Pseudonyms were generated by using the letter in the alphabet that follows the first letter of the participant's first name. For example, Maria might choose the pseudonym Noemi since N follows M in the alphabet.

Confidentiality of participants was maintained by using their pseudonym and by securing written and audio digital data in REDCap. Paper records, data storage devices from the digital recorder, and flash drives with digital study information were stored in a locked cabinet in the investigator's work office. A master list tying the real name to the pseudonym was maintained in a separate locked cabinet in the investigator's office.

Participant interviews.

During the interviews, open-ended questions elicited how informants experienced milk expression in the workplace and how breastfeeding was maintained while employed in agriculture. Interview questions were based on SEMBA and can be found in Appendix E. Although the goal was to follow the case study protocol, personal relaxed conversation or *platicar*, was undertaken to capture the participant's sense of reality (Evans, Coon, & Crogan, 2007; Yin, 2014). Attention to the Mexican cultural value of *personalismo*, or establishing a warm social connection, before delving into the business at hand, helped

the investigator build *confianza* (trust) and *respeto* (respect) (Evans et al., 2007). Additional probing questions that were suggested by the participants' answers were formulated by the investigator as the discussion progressed (Hsieh & Shannon, 2005). The actual face-to-face participant interviews lasted anywhere between 20 to 50 minutes, for a total commitment time of about 60 to 75 minutes, including the consent process and questionnaire. As a thank you gift, a \$20 grocery card was given to each participant after the interview concluded.

Shortly after the interview, the investigator completed a one-page contact summary form (CSF, Appendix F), conveying her thoughts and feelings on participant comments and non-verbal communication. A CSF utilizes questions to help the investigator focus and summarize the salient points of an encounter. Although this investigator had a written transcript of each participant interview, the CSF served as a “quick and dirty” strategy to condense data without risk of information loss. Impressions and reflections were captured on the CSF, preserving them for later reflection and analysis (Miles et al., 2014).

Data collection devices.

Complementary sources of data were gathered via the sociodemographic questionnaire and a semi-structured interview with study participants. The investigator first asked each participant the questions on the sociodemographic questionnaire and wrote down their answers. The questionnaire was investigator-designed specifically for the study population, and the data helped identify relationships between sociodemographic variables (e.g., parity, previous breastfeeding experience, years of living in the U.S., languages spoken, type of job within agriculture) and other factors

identified during the semi-structured interview, the primary source of data for the study. A table describing the sociodemographic characteristics of the sample can be found in Chapter 4.

Individual semi-structured interviews were conducted by the investigator and recorded with a digital voice recorder. During the interview, only the pseudonym of the participant was used. The investigator-designed interview guide helped facilitate discussion with the participants and was designed to elicit perceived enablers and challenges to successful milk expression in the workplace at each of the five levels of SEMBA. After an open-ended question, the investigator followed up with targeted probing questions to further explore their experiences (Hsieh & Shannon, 2005).

Both the sociodemographic questionnaire and the interview questions were designed in English and were translated into Spanish by an independent certified translator who was familiar with the idiom of the target population. A second translator back translated the Spanish version of the documents to English as a check of the accuracy of the forward translation in terms of conceptual and cultural equivalence (Medrano et al., 2010). Any inconsistencies in meaning were resolved after consultation with the cultural aide.

Data processing and preparation.

The basic, raw data collected through questionnaires and interviews must be processed before the work of analysis can begin (Miles et al., 2014). As anticipated by the investigator, the participants preferred to discuss their breastfeeding experiences in Spanish. The recorded interviews were first transcribed into text by a certified Spanish language transcriptionist, then translated into the target language (English). This step was

rendered by a certified translator who is fluent in both languages. Next, another translator who was blind to the original translation, back-translated the English version to Spanish. Translators and transcriptionists were employed by the investigator for data processing only and were not involved in data collection. To increase rigor, it is important to be cognizant of factors that can influence the quality of translation, including familiarity of the transcriptionists and translators with the culture and vocabulary of Mexican-descent workers. The translation and back-translation processes were repeated until it made sense to the investigator in both the source and target languages (Chen & Boore, 2009).

There were occasions when a particular word or passage attributed to the participant did not make sense to the investigator as she read the English transcript, so she returned to the Spanish transcript and the recorded interview. In one case, two minutes of the interview were not transcribed at all, and the recording had to be returned to the transcriptionist and translator. In a few other situations the words of the interviewee were transcribed incorrectly, completely altering the meaning of the passage. The investigator, with input from the cultural aide, corrected the transcript.

Data Management

The investigator maintained separate de-identified paper and digital folders for each study participant, which only she and her research committee could access. Files contained sociodemographic questionnaires, contact summary forms and other interview and analysis notes, audio transcriptions and translations of the interviews, and the initial coding of the transcript. (The concept of *coding* will be introduced below, under “Directed content analysis”). A separate file, kept in another locked cabinet apart from other data, contained the signed informed consent forms and the master list. Paper files

were stored at the investigator's worksite in a locked file cabinet, while digital data was securely stored on REDCap (Research Electronic Data Capture). Audio files from the interviews were downloaded from the recorder and stored on REDCap as well.

Transcriptionists hired by the investigator were given temporary access to the raw audio data pending completion of their specific task. Subsequently, the certified translator, also hired by the investigator, was afforded access to the de-identified transcripts until the translation process was completed. All study personnel completed confidentiality agreements and human subjects training prior to interacting with the data. Data will be retained for seven years and if requested, shared for reanalysis by other researchers to enhance study confirmability (Miles et al., 2014).

Data Analysis and Synthesis

Data analysis for this study consisted of directed content analysis conducted with data obtained through participant interviews and descriptive statistical analysis of data derived from the sociodemographic questionnaire.

Directed content analysis.

Historically, content analysis was primarily used as a quantitative research method to code text into categories and then describe with statistics. However, content analysis has increased in popularity in qualitative health research and is recognized for much more than tallying words and phrases. Language is examined in detail so that larger units of text can be classified into smaller, manageable categories with similar meaning. Data collection and analysis occur simultaneously as both processes influence one another (Hsieh & Shannon, 2005; Sandelowski, 2000). In the *directed* approach to content analysis, the goal of the investigator is validation or conceptual extension of a

theoretical framework or theory. Directed content analysis is often used when previous research on a phenomenon is incomplete, as in the case of lactation accommodation for farmworkers (Hsieh & Shannon, 2005).

One approach to content analysis is to develop a list of codes before the start of participant interviews, based on the theoretical framework, research question, and knowledge the investigator brings to the study (Miles et al., 2014). A *code* is a label, a word, or a phrase, generated by the researcher and attached to segments of text that reflect *themes*, or topics that recur (Miles & Huberman, 1994). Themes identify what a unit of data is about and/or what it means, and is an outcome of coding (Saldaña, 2013). The investigator gleaned data from the literature review and her experience working with the study population to identify potential factors of influence at each of the five levels of SEMBA. The model was then used as a guide for the creation of preliminary or *start* codes that aimed to tie SEMBA to the data. Miles et al. (2014) suggest that as many as 50 codes might be included in a start list of codes, if structure and rationale is sound, but an experienced qualitative researcher may finalize code lists containing up to 150 (B. Evans, personal communication, April 17, 2017).

A coding method known as *process coding* was used in the study, whereby gerunds (verbs ending in “ing”) are assigned as codes to the data, indicating action whether observable or conceptual (Miles et al., 2014; Saldaña, 2013). For example, “receiving support from healthcare provider” and “having a healthy baby” were start codes created by the investigator, representing different SEMBA categories. Process coding is considered a *first cycle* coding method, used in the beginning stages of data analysis (Miles et al., 2014; Saldaña, 2013).

The investigator learned after the first attempts at coding the interview transcripts that many of the start codes did not accurately reflect the reality of the participants' experiences. To create more nuanced codes, she decided to implement *in vivo* coding, a form of inductive coding that contains words or phrases gleaned from the actual words of the participant and complements other methods including process coding (Saldaña, 2013). Although most codes that emerged during *in vivo* coding were very similar to the start codes, many more were unique and honored the farmworking women's stories that had to be told. For example, an *in vivo* code that was not an original start code, *being threatened with loss of wages*, represents the stress and helplessness that hangs over Carmen's head as she struggles to pump during her short break. *In vivo* coding is appropriate for almost all qualitative studies but is especially helpful for beginning researchers with limited coding experience, including this investigator (Saldaña, 2013).

In vivo coding of all five transcripts initially yielded over 330 codes. Once conceptually similar codes were consolidated, the revised list of start codes was reduced to 73. The investigator once again coded the transcripts with the revised codes, assigning codes to data "chunks" or meaning units of text, essentially condensing the data. A *meaning unit* is a segment of text, from a single word to an entire page, representing a particular idea that was assigned one or more codes. As the investigator immersed herself in data analysis, she made linkages between data collection and meaning, eliciting familiarity with the text, and creating a deeper reflection of the meaning of each passage (Jiggins-Colorafi & Evans, 2016; Miles et al., 2014; Saldaña, 2013).

The finalized coding manual, found in Appendix H, contains the updated start codes and a brief, operational definition. Each code was assigned an alpha-numeric

identifier, with the numbers corresponding to one of 12 categories aligned with a level of SEMBA. The identifier was used when assigning codes to segments of text from the interview transcripts. Wide right margins on the published transcripts allowed space for the investigator to code and to jot down reflections of the text. These marginal jottings included personal reactions, notes to further research an issue, or any other idea to be pursued during the memoing phase, introduced later in this section (Miles et al., 2014). As data collection and analysis progressed, the coding manual continued to be revised iteratively as new codes or subcategories of existing codes were revealed, or unneeded a priori codes were eliminated. The inductively generated codes further strengthened internal validity (credibility) (Jiggins-Colorafi & Evans, 2016; Miles et al., 2014). When the manual was finalized, previously coded data was recoded with the final version.

The next step of coding for this case study was pattern coding, a form of *second cycle* coding that uses first cycle codes to condense data into fewer and increasingly abstract themes, categories, and constructs (Miles et al., 2014; Saldaña, 2013). Conceptually similar codes were clustered into more abstract categories, reflecting larger, more inclusive concepts. Categories were refined into subcategories as needed, as well as compared and consolidated. This was an iterative, time-consuming process as the investigator became more comfortable identifying patterns and redundancies in the codes. Example text (exemplars), representing each code, were inserted into the revised coding manual so that anyone coding the transcript could recognize instances of each specific code (Jiggins-Colorafi & Evans, 2016; Miles et al., 2014).

The essence of study dependability (reliability) is whether the process is consistent across time, investigator, and method (Miles et al., 2014). Dependability is

enhanced when multiple coders are tasked with finding examples of a given theme in a transcript. First, the investigator reviewed the coding manual with a colleague who works with the same population and assisted them in coding some examples. Then, each coder independently coded passages from 10 pages of an interview transcript, and they reconvened to compare notes and reconcile disagreements. This practice, called check-coding, determines if the coders agree on the size of codable data chunks, and if they use similar codes for the same chunks. Check-coding presents a valuable opportunity for the investigator to sharpen definitions, clarify emerging insights about the data, and help validate the findings (Miles & Huberman, 1994; Saldaña 2013).

Intercoder reliability, also known as interrater reliability, is the probability that multiple coders will agree on coding decisions. It was calculated using the formula documented in Miles and Huberman (1994, p. 64):

$$\text{reliability} = \frac{\text{number of agreements}}{\text{total number of agreements} + \text{disagreements}}$$

An intracoder and extracoder agreement of 90% was the goal of this study, and lower agreement rates were resolved through discussion until agreement improved to 100%. The coding manual was updated as coders settled disagreements about the content of themes. The process was repeated with other chunks of text until the coders reach the desired agreement rate (Bernard, Wutich, & Ryan, 2017; B. Evans, personal communication, August 7, 2017; Miles & Huberman, 1994).

Concurrent with coding, analytic memoing was used to document the investigator's thought processes about the collection and analysis of data. This documentation of connect-the-dots thinking, intuition, and brain-storming led to richer

explanations of context and study participants and their relationships to the phenomenon of interest and the researcher herself (Miles et al., 2014; Saldaña, 2013). In analytic memo writing, the goal was to reflect and explain the data, rather than summarize. Memos are the transition from coding to research write-up (Jiggins-Colorafi & Evans, 2016). It was during this time of reflection on the data that the investigator explored important issues emerging during interviews. For example, she wrote analytic memos on the concepts of *stigma* and *discrimination* since the participants articulated their occurrence in the workplace. This exploration took the investigator deep into writings on stigma related to race, disability, breastfeeding, and even geopolitics, to name a few of the attributes mentioned in the literature. Similarities and differences among participants were noted while memoing, as codes and categories were refined (Saldaña, 2013).

As part of data analysis, the investigator created a series of matrices presenting information in a systematic manner. Data matrices are tables with rows and columns displaying concepts or variables discovered in participant interviews or the sociodemographic questionnaire, and are used to categorize, organize, and analyze data (Jiggins-Colorafi & Evans, 2016; Miles et al., 2014). In this multiple case study, two types of analysis were conducted: within-case and cross-case. Within-case analysis describes each case and its themes, while cross-case analysis is performed to analyze themes across cases to find commonalities and differences. Matrices enabled the investigator to combine and examine the qualitative and quantitative findings with one-stop shopping, so to speak. Multiple types of evidence may strengthen findings and enhance validity (Miles et al., 2014; Yin, 2014).

Replication, or being able to reproduce findings in a new context, bolsters validity and is the ‘bedrock of science’ (Miles & Huberman, 1994, p. 273). A replication strategy was used by initially studying the matrix of the first case in depth, looking for commonalities and differences, and then generating propositions, as described under “Case Study Design.” Propositions suggest an if-then or why-because event about the phenomenon of interest and may be the endpoint of a study, with recommendations for further analysis. With an eye toward replication of findings, propositions may also be tested against other cases by repeating the initial procedure with the same or different participants (Evans et al., 2015; Miles et al., 2014). If the additional cases follow predictions, that lends support to the propositions. However, if cases do not hold up to the initial propositions, they will be refined and retested (Yin, 2014). With more cross-case analyses, validity is increased. It became apparent after the first cycle coding of the five interview transcripts that informational redundancy was achieved. Redundancy is characterized as the point in data gathering and analysis when additional information no longer generates new insights into the data (Sandelowski, 1995).

Descriptive statistical analysis.

In this case study, statistics are secondary but were useful to supplement the qualitative findings. Questions 1, 3, 4, and 5 from the SASH were included on the sociodemographic form and were scored to predict acculturation (Marín, et al., 1987; Marín & Marín, 1991). Other quantitative data derived from the sociodemographic questionnaire were analyzed across cases and summarized to detect patterns (Bloomberg & Volpe, 2016), and are converged with qualitative findings during data analysis. Data displays, or matrices were used to categorize, organize, and analyze both quantitative

(Table 2) and qualitative data (Appendix I). The collection and integration of quantitative survey data in qualitative case study research facilitates a holistic understanding of the phenomenon of interest (Baxter & Jack, 2008).

Issues of Trustworthiness

While quantitative analysis follows rules and formulas, qualitative analysis is based on the insights, integrity, and conceptual abilities of the investigator throughout the process. The focus in qualitative inquiry is on whether the researcher has presented evidence that descriptions and analyses represent the reality of the phenomenon of interest. It was imperative that the investigator planned the study being mindful of bias that can weaken the findings (Bloomberg & Volpe, 2016; Patton, 2015). Miles et al. (2014) present five criteria that are helpful in judging the trustworthiness, or soundness, of qualitative research conclusions: dependability, credibility, transferability, confirmability, and utilization.

Dependability.

The crux of dependability, or reliability, is consistency across investigator, time, and method, reflecting whether other researchers can follow the same steps used to collect and analyze data and uphold the quality and integrity of the study (Miles et al., 2014). Strategies to maximize study dependability in this project included the development of clear research questions, with a congruent study design; delineation of the role of the investigator and other personnel involved in the study; data collection across a full range of participants, as described in “Sample size”; indication of parallelism across data sources (interview, demographic questionnaire); review and direction by experienced qualitative advisors throughout the study (Miles et al., 2014); ensuring that

data collection and analysis occurred simultaneously, allowing the investigator to make revisions throughout the process (Jiggins-Colorafi & Evans, 2016); and intercoder agreement, whereby committee members and associates separately coded interview transcripts to measure agreement (Miles et al., 2014). This strategy of check-coding, previously described in detail in “Directed content analysis,” reduced the possibility of bias by the individual investigator collecting and analyzing data and insured that the codes reflected what is in the raw data (B. Evans, personal communication, August 10, 2016; Bloomberg & Volpe, 2016; Fonteyn, Vettese, Lancaster, & Bauer-Wu, 2008; Miles & Huberman, 1994; Miles et al., 2014).

Credibility.

Credibility, or internal validity, attends to assurances by the investigator of fit between the study participants’ understanding of their experience and the investigators’ reconstruction and representation of it (Patton, 2015, p. 685). Credibility prompts the question: Does the conclusion of this study reflect the reality of breast milk expression in the workplace among farmworking women? The investigator employed various strategies known to strengthen credibility (Miles et al., 2014; Jiggins-Colorafi & Evans, 2016), including: composed a description of the experiences of participants in a context-rich and meaningful way; linked the data to the levels of SEMBA, using the coding manual; determined if findings seem plausible to other researchers or practitioners experienced with the study population; searched for negative cases; and considered rival explanations. For this study, the investigator collected quantitative and qualitative data from sociodemographic questionnaires and participant interviews, with the aim of corroborating findings.

Transferability.

In cross-case analysis, the researcher examined processes and outcomes across multiple cases to improve understanding of how participants were influenced by various socio-ecological levels, thus leading to compelling descriptions and explanations that invite transferability (Miles et al., 2014). Transferability, or external validity, was enhanced because the description of the sample, settings, and processes of the study by the investigator are sufficiently rich and detailed to allow for comparison with other samples, and for readers to consider the potential for their own settings. Maximum variation sampling, employed in this study and described under “Sample size,” also aids in transferability. Case variations included differences in job situation, working alongside family members, level of supervisor support at the workplace, and other factors at each level of SEMBA that reinforced representativeness.

While transferability from a study conducted with Mexican immigrant farmworking mothers may seem limited in context, the findings may resonate with researchers studying mothers in other manual labor jobs who struggle to continue breastfeeding. Recommending ways that findings can be replicated with other research or tested further are means for the investigator to bolster transferability and can be found in Chapter 5, Conclusions and Recommendations.

Confirmability.

Confirmability, known as objectivity in quantitative research, lends trustworthiness to the study by addressing investigator biases. In qualitative inquiry, the researcher is the instrument, and it is important to understand their experience, training, purpose, and preconceptions (Patton, 2015). The Methodological Appendix (A)

addressed this issue for the current study, and as conclusions were drawn, the investigator considered how personal biases might have influenced the process.

Acting on suggestions by her dissertation committee, the investigator further addressed confirmability by explicitly explaining the steps of data collection, processing, analysis, and display required for drawing conclusions. This attention to detail while creating a roadmap of the study increased the likelihood that other researchers making the same journey will arrive at similar conclusions. Other strategies to strengthen confirmability in this study included the practice of data retention and availability for reanalysis by others, previously described for this study under “Data Management,” and considering rival conclusions and their plausibility (Jiggins-Colorafi & Evans, 2016; Miles et al., 2014).

Utilization.

Utilization, or application of study results by both researcher and participants, is a criterion of trustworthiness (Miles et al., 2014). During this study, the investigator expected to uncover if and how farmworkers were accommodated for milk expression at work. Findings have been shared with professional groups and associations that serve breastfeeding mothers, agricultural business personnel, and academic colleagues (described in Chapter 5 under “Dissemination”), and eventually actions may be taken that lead to empowerment of participants and subsequent positive change. Change may be as limited as an increase in knowledge and attitude about workplace lactation accommodation among the study sample and minor revisions of SEMBA, or as far-reaching as a corporate, or even government-level policy change. Findings might also

inspire other lactation advocates to study the phenomenon in their own specific community or industry and lead to more knowledge (Miles et al., 2014).

Potentially negative consequences of the study may result if newly empowered participants or members of their social sphere demand accommodation from a company unaware of or hostile to lactation law. This type of dilemma was partially addressed by reminding participants they were welcome to call the investigator if they had any questions during or after the study, as stated on the consent form (Appendix C). In this case, participants can be referred to the appropriate organization for assistance. Shortly after the conclusion of interviews, revisions to the California labor code addressing lactation accommodation in the workplace were implemented. One of the new provisions of the law requires all employers, including in the agricultural industry, to have a lactation policy that is shared with employees. The policy must inform employees how to file a complaint with the California Labor Commissioner (CDPH, 2021).

CHAPTER 4

FINDINGS AND DISCUSSION

Introduction

This study examined the experiences of Mexican immigrant breastfeeding women who attempted to express their milk in the California agricultural workplace during 2018 and 2019. Each farmworking mother will constitute a “case” and the reader will learn about her journey to pumping at work: why and how she decided to express (pump) her milk at the job site, and the factors present at each level of a socio-ecological framework (SEMBA, Figure 1, Chapter 2) that she perceived as an enabler or challenge to her pursuit of lactation accommodation. The mothers voiced their own priorities for support at the various levels of SEMBA, helping the investigator to recognize how resources might be targeted to improve their milk expression experience. In Chapter 5, recommendations for supporting lactation of farmworking mothers will be discussed.

Each case will be examined in depth according to the three major themes derived from the directed content analysis described in Chapter 3: *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail*. Findings and discussion from within-case analysis are presented for each mother, addressing each theme, and are supported by a description of participant experiences and verbatim exemplars of their own words. The principal objective for this within-case analysis is to gain an understanding of the uncommon and previously undescribed phenomenon of milk expression in the agricultural workplace. Next, cross-case comparisons will be made in which commonalities and differences among study participants are identified and discussed, guided by their relationship to the three overarching themes. The advantage of studying multiple cases in a cross-case

format is to enhance generalizability and support understanding that the situation described for one farmworking woman is not necessarily unique and can be applied to other contexts (Miles et al., 2014).

The use of both sociodemographic and qualitative data provides a multidimensional perspective of the cases; aids in identifying differences and commonalities between cases; helps determine the suitability of SEMBA for understanding a previously unexplored phenomenon; and tests propositions generated from cross-case comparisons (Evans et al., 2015).

Identification of Categories and Themes

In the iterative process of first cycle coding, the investigator initially discovered over 330 codes; by eliminating redundancies, this number was reduced to 73. In second cycle coding, conceptually similar codes were condensed into twelve more abstract categories. Although there was some overlap, notably for the categories of *advocating for her peers* and *living up to the cultural values of marianismo*, each category is mostly aligned with distinct a priori levels of SEMBA. *Pumping for baby*, *living up to the cultural values of marianismo*, *risking health*, and *overcoming adversity* corresponded to the individual (mother-child) level of the model; *family support*, *living up to the cultural values of marianismo*, *feeling stigmatized*, and *advocating for her peers* aligned with the interpersonal level; *community support* and *living up to the cultural values of marianismo* fit the community level; *facing discrimination from leadership*, *deprivation of lactation space and time*, and *risking health* aligned with the work environment level; and *trust in the law* and *advocating for her peers* correspond to the structures, policies, and systems level. A category of *social support at work* reflects only a limited number of positive

interactions experienced by participants in the interpersonal (coworkers) and work environment (supervisor) spheres, and is not addressed in detail in the chapter.

The twelve categories identified above were further reduced into three overarching themes: *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail*.

Honoring Culture is an overarching theme that transcends the role of study participants as women, mothers, family and community members, farmworkers, and Mexicans. The categories supporting this theme are *pumping for baby*, *family support*, *community support*, and *living up to the cultural values of marianismo*. The expectations thrust upon the women are many, but they endured physical and mental sacrifice in the spirit of marianismo to provide breast milk for their babies. Study participants drew upon the strength of family, community, and the Mexican culture of breastfeeding they “carry with them” in their efforts to express milk at work. *Family support* particularly was identified as a key enabler in their commitment to pumping in the agricultural workplace.

The second overarching theme of *Running the Gauntlet* originates from the physical, psychological, and emotional toll that results from engaging in a practice that is virtually unknown within the farmworking population. As their domestic and work life spheres are thrust together in a mixed-gender worksite, study participants struggle to find adequate space and time to pump their breasts. Categories within this theme are derived from the words of the women interviewed: *deprivation of lactation space and time*, *feeling stigmatized*, *risking health*, and *facing discrimination from leadership*.

Blazing a Trail for herself and her sister farmworkers was the third overarching theme emerging from participant interviews. In most cases, the women were the first of their social sphere to express their milk in the agricultural workplace and they remained

committed while *overcoming adversity*. Study participants spoke of their knowledge of and *trust in the law*, a category within the trailblazing theme, reflecting their faith that employers and coworkers would honor their lactation rights. Although the women set out to pump for the sake of their babies, they understood that they were also showing other farmworkers it could be done. By their actions they were *advocating for their peers* who might follow in their footsteps of milk expression at work.

Sociodemographic Description of Sample

It was difficult to find study participants that fit the selection criteria of low-income, breastfeeding Mexican immigrant women who initiated milk expression in the agricultural workplace. Although the investigator and her colleagues in Monterey County routinely speak with Mexican-descent farmworkers who are breastfeeding their babies, the majority are not willing to pump at the workplace, a practice which would help maximize their milk supply. Rather, many mothers breastfeed or pump in the morning before they leave for work and throughout the evening when they return home, although it is unlikely they can maintain a full milk supply in this manner. Some farmworking women breastfeed only at night, and when the season is over, they breastfeed or pump at home throughout the day as they try to increase their milk supply once again. Mostly though, they give *las dos cosas*, feeding their infant both breastmilk and formula, for the first year of life. Rare is the farmworking mother who exclusively breastfeeds her child without some infant formula supplementation.

Table 2*Sociodemographic Characteristics of Study Participants*

Study participant:	Martha	Carmen	Tania	Nancy	Gabriela
Age	33	38	32	36	32
Marital status	S	M	M	M	S
Years of education	6	9	12	6	6
Years in U.S.	10	2	16	20	4
# U.S. born babies	2	1	2	2	1
# Mexican born babies	1	2	0	0	1
Age of study baby, months	2	6	2	10	12
Baby age at return to work, weeks	8	16	4	12	16
Length of time pumping, weeks	2	12	6	28	32*
Why gave formula	Work	Work	In hospital as newborn	In hospital as newborn	Donor milk
Longest time BF, months	6	14	24	24	13
WIC PC, yes/no	Yes	Yes	Yes	No**	Yes
Type of work	Cut broccoli	Prune strawberries	Pick blackberries	Pick mushrooms	Wrap lettuce
Requested pumping space/time, yes/no	No	Yes	Yes	Yes	No
Where pump	In field	Vehicle	Between berry rows	Different rooms	In field
SASH score	1	1	1	1	1

Note. * Stopped pumping when the season ended but continued breastfeeding at home.

** Not enrolled in WIC Peer Counseling program but received their services.

Five women participated in the study and each chose a pseudonym for herself that is used throughout this document: Martha, Carmen, Tania, Nancy, and Gabriela. Some details about their work situation have been lightly edited to help protect their privacy. Because of the difficulty in recruiting participants from the mostly homogeneous population described, the investigator was fortunate to find a sample with some sociodemographic variations of interest. For example, there were differences among job type within agriculture, partner relationship status, years living in the U.S., formal request for employer accommodation, level of formula supplementation, and duration of pumping. However, there was little if any variation in other sociodemographic factors, including age, acculturation score, and WIC breastfeeding peer counselor (PC) support.

Within-case Analyses

Within-case analysis: Martha.

Martha was the first woman interviewed for the study, and we met at the home she shared with another family on a Sunday, her only day off that week from her broccoli harvesting job. She worked for a large vegetable grower-shipper, one of six women on a crew of twenty. Single, she had lived in the U.S. for 10 years, immigrating in her early 20s. Her first child was born in Mexico, and she breastfed him for 6 months. She was determined to do better with her second child, a son now 6 months old. She had returned to work two weeks prior to our meeting and was struggling to build her milk supply, especially since she sometimes missed her breaks. Despite knowing about her lactation rights, she did not discuss lactation accommodation with her company's human resources (HR) staff or her supervisor about potential support and her need for space and time to pump. Her breastfeeding peer counselor provided her with a battery-powered pump and

other breastfeeding aids and information. Martha pumped alone in the field, far from the group, covering herself with a *manta*/nursing cover. Martha had worked in agriculture for ten years and did not know anyone else who had pumped at the jobsite.

Honoring culture.

Martha was very aware that the long days away from her baby while she was working took a toll on both, and she was determined to do what was necessary for him to receive her breast milk. She stressed that “we must be conscientious that the better we give, the healthier he’s going to be...” During the interview, she frequently compared her breast milk as being “like a medicine” and even though she acknowledged that sometimes she must supplement with formula, she saw the few ounces of milk she was able to pump at work as like “...giving him a gummy vitamin...” She commented often on the need to overcome the adversity of the workplace but “...the decision is strong, at least me personally to see how long I can breastfeed my baby.” Martha went on to say that “...for bad or for good there is always criticism, so it is better to block all of that and try to think of our baby in that he needs that vitamin and continue doing all you can.”

Martha received encouragement to breastfeed and pump at work from family and community sources. She herself was breastfed for a long time, and as a Mexicana, she sees breastfeeding as a normal thing. “Well yes, in Mexico everyone breastfeeds their babies up to one year or two years.” Martha singled out the WIC Program for the support she received. “Well, WIC was the one that informed the most on giving the breast to feed the baby...they have available everything that is necessary. It is our decision whether to use it or not.” Martha stated that doctors encouraged her as well but admitted that

ultimately it was her own will (consciousness) that got her through the adversity she faced. It would have been so easy to feed her baby only formula but,

... it's very nice because you go with the peace to know that he is drinking something that's yours and not from a can of milk that doesn't have the same vitamin. Yes, it's good that he's drinking something better.

Although Martha experienced criticism and stigma from many of her co-workers, she took to heart some words of wisdom from a woman on her crew who encouraged Martha to persevere after she said she didn't want to pump because of her shame:

“...OK, for giving credit to others you are going to leave your baby without eating?”

Running the gauntlet.

Pumping in the workplace means that you are risking your own health by taking fewer breaks for other personal needs. Although there are no recommendations on the fluid requirements for a lactating person, many mothers feel they need extra fluid to maintain their milk supply. There is no evidence that fluids consumed in excess of thirst increase milk volume (Ndikom, Fawole, & Ilesanmi, 2014). Martha noticed that she was pumping less milk and thought it might be due to the decrease in her water intake. She was also concerned about the effect of the heat of the day on her pumped milk, stored in an insulated lunch bag with blue ice:

Sometimes I have the water in front of me but sometimes the [harvesting] machine is going too fast, then I tell myself I'll go drink but I only drink a small bottle or two when before I would drink up to five or six, it's difficult. Well, that's one that I feel my milk is diminishing and other is the heat because even with the bag and the ice they have given me it's good, but sometimes like Tuesday, we worked from seven until seven and that's a very long time. Ice will not last that many hours, so I start to think, what if I save it and it's no good anymore and instead of doing him good her will sick on me because of the milk that is not good anymore or things like that.

The physical challenges are well known to mothers who pump at work, but the stigma and discrimination faced by women who pump at work is equally discouraging. Martha recounted how she wanted to pump in the supervisor's truck cab, but the truck was needed to haul a trailer full of harvested broccoli to the cooler. In the absence of the company vehicle, there was no private place to pump. Personal vehicles are usually not allowed at harvest sites without special permission, and Martha did not disclose her need for lactation space to company management. The equipment yard where personal vehicles are stored was about a 15-minute walk round trip, so it was impossible for her to travel there, pump, and walk back during the permitted break time. Martha was resigned to pump in the open field, far from her mostly male coworkers:

It [the truck] leaves at break time and there is nowhere I can say that I will go hide. I'm out in the open and it's my decision, I would see how the men would look at me and it was like, "what is she doing?" and "the cow is being milked," things like that I would hear, right.

Even a male coworker who gives her a ride to work every day feels that comments about pumping her breasts are fair game.

"...now she there, now the cow is being milked." I said fine, I took it as a joke, right, because we were conversing, but if I would have taken it the wrong way then I probably would have said if he's saying this, what are the rest of them going to say.

Martha has no peers with workplace lactation experience that she can turn to for support. Rather, she hears criticism from other women that seems aimed at eroding her commitment. "For many it would be easier to give them the formula and they say, "why do you give it [breastmilk] to them, it's a waste of time," in that way it discourages you." Martha acknowledges that,

...I think that in my group I am the first one that they have seen, because there are only six women in this group. There aren't more, there are only men, that's why it's more difficult for us...I've been here all this time working and I've never seen a woman pumping milk at work...All the time I hear "Oh when I get home he's on my breast all night" but that I have seen that they save their milk like I told you a while ago I save three ounces or two ounces, no, no I haven't seen that here.

Martha's words also speak to the suffering both she and her baby would experience if she did not pump. Her short-term discomfort (engorged breasts) and potentially long-term illness (mastitis), and her baby's short- and long-term health would be compromised if she did not pump. She notes that when she does not have enough pumped milk and gives her baby formula, his tummy gets bloated with gas:

...if you deny in doing it [pumping] the only one affected here is the baby. The baby and one as a mother because you also suffer when your breasts get full and tight and when that happens to me I pump both of them and I feel a tremendous relief. Even when they are not very full, when you do it you find a great relief. So I say ok, I am good and my baby is good...

Despite her struggles, Martha remains hopeful for other mothers who want to pump at work.

Blazing a trail.

Martha learned about the California lactation law and it gave her the confidence to pursue the pumping of her breasts at work, although she hinted that permission to do so could be taken away:

Well they did tell us that we couldn't be denied to do it if we wanted to pump milk. That they couldn't deny you, then that helped me to think that they couldn't get on to me, they couldn't give me a ticket, a warning because it's not during work. You have to do it on your break and they also can't tell you lady you can't do that, we are going to give you a warning or you can't do that here. Everyone has that right to pump or breastfeed wherever possible.

However, Martha goes on to say that if the supervisor tells her that pumping is no longer allowed then she would have to comply, despite her feeling empowered by the

law. Martha was unaware if her company had a lactation policy and when asked if her supervisor even knew she was pumping, she responded,

Ah, I haven't spoken to him, but he has seen me and I'm sure he can imagine but I say it again perhaps I haven't gotten the courage to tell him, and him also maybe for discretion he hasn't done it also. If he sees me and he doesn't tell me, "Oh, what are you doing, but he also doesn't ask me... maybe he does it more like...or maybe he's waiting for me to say something like even now he hasn't seen me be able to get on the truck but if some day he sees me and goes and tells me "You know you cannot do that here" then maybe I will make another decision, but until now they haven't prohibited it, and in that sense I think it's fine.

When Martha was asked if her coworkers knew that she was protected by law to pump at work, she responded that she was not sure, but she didn't think so. She believed that if her coworkers were informed of the lactation law, they would respect breastfeeding women:

They know that this woman returns from having her baby and they know that Human Resources tells them, "This will be your area or you can do it here or nothing will happen if they see you." Why? Because you know that they are already informed, they have the knowledge that that woman that is pumping or breastfeeding if that would be the case they are not going to be looking at her judging her.

Within-case analysis: Carmen.

Carmen requested the study interview take place at a neighborhood park near her home. Her son, almost 7 months old, slept in a stroller beside his mother as she and the investigator spoke. Carmen emigrated to the U.S. two years prior and works in the strawberry fields, weeding and pruning the plants. She explained that she breastfed her two Mexican-born children for over a year. With her current baby, she returned to work when he was 4 months old, and she had been pumping at the worksite at least once a day ever since. Although her husband was not employed by the same company, he was supportive of her pumping at work and helped her prepare her breastfeeding supplies

every morning before she went to work. When Carmen's teenaged daughter was not in school, she worked alongside her mother on the same crew.

Carmen's breastfeeding peer counselor (PC) encouraged her to pump and provided information about the law and helped her obtain a battery-powered pump. Carmen consulted with her supervisor about her lactation needs before returning to work after the birth of her child and felt supported. She pumped in a vehicle, away from the rest of her crew. However, with a change in supervision and support, Carmen's ability to pump as often as needed changed abruptly, despite her company having a history of support for lactation accommodation.

Honoring culture.

A recent immigrant, Carmen is respectful of the breastfeeding traditions of Mexico. When asked how her culture affected her decision to pump, she replied,

Yes, because in Mexico we breastfeed our children for a long time, and it seemed to me a little unfair to leave him when he was so young, to take away his nourishment, something that helps with his well-being, his health. Our custom over there is [to breastfeed] for up to a year and a half, two years. And I didn't think it was fair.

Her reason for pumping is also "...for my baby's well-being and my own as well. For health reasons." She recognizes though that continuing to breastfeed after returning to work in the field is a challenge.

Carmen is surrounded by support for breastfeeding and pumping at work: her husband and daughter help her get ready for work and pack her pumping supplies:

...the people closest to me, who are my daughter and my partner, they help me by carrying my bag, cleaning everything, keeping everything properly so I can pump. Other people tell me: "That's great, that's great! Keep doing it, keep doing it. It's your right to continue breastfeeding your son, even if you are working in the field."

Her child care provider is an acquaintance, but Carmen appreciated the care she gave to her baby. “Yes, she supports me a lot with my baby’s care. The baby loves her very, very, very much. ...[I] Leave for work very relaxed knowing that this person takes very good care of him.” The WIC breastfeeding peer counselor also provided Carmen with the support she needed with information on the law, a breast pump, and other supplies. She considered WIC a major influence for her decision to pump at work:

Because they talked to me about the way to breastfeed my baby. Sometimes one thinks that at a certain age, we know everything already, but that’s a lie. One doesn’t know many things. Here they taught me how to treat my baby, how I should feed him, how I had to manage at work to be able to extract my milk and continue breastfeeding my baby.

The truth is that I didn’t know any of this, but thanks to WIC, to the advice of my counselor Olga, she helped me a lot, she helped me understand that female field workers have the right and the opportunity to pump in order to continue breastfeeding their babies.

Carmen feels strongly that breastfeeding women are not valued for their contribution to the health of the community. When asked how the government could better support them, she replied,

An illness of any kind is covered by the government. If the person has Medi-Cal, any insurance, the government covers everything, right? A healthy child doesn’t create expenses. In that sense I think the government you help us more. Now, lactating women make a great sacrifice when we go to work, we support companies with our work, and we still take the time to extract our milk for our babies. As women the work we do is too much to not receive support. I think that companies should support us more, facilitate more, the time we take to pump. They should provide what’s necessary to make that moment the best possible.

Running the gauntlet.

Carmen particularly faced challenges with her pursuit of appropriate lactation accommodation. At first, she was content with her pumping situation, but then everything changed, leaving her frustrated and defeated. Initially, her foreman was giving Carmen

the time she needed to pump, but a higher-level supervisor came on the scene:

Everything was perfect. Two months went by with that time, and I was perfect because I was resting, I felt well. After those 2 months, the main supervisor arrived-- and he told me: "You are taking too much time off. We are going to deduct that time from your salary-- because what you have, the time you should take for that is ten minutes, once a day...I told him: "I need to be connected to a machine for fifteen minutes. Aside from that, you haven't brought me a little house [tent]" that supposedly they provide for us for this purpose." ... I need to walk up to five or ten minutes to get to where my car is and then pump...And he told me: "No...if you want to continue taking that much time for pumping, we are going to deduct it from now on."

Carmen told the supervisor that due to concerns about developing mastitis she needed to pump frequently. She told him of the pain she experienced due to plugged ducts, and her discomfort when her breasts leaked while she was in the field working. He replied, "It's not my problem...you decided to come work in the fields. He said, 'Talk to Human Resources and they will confirm what I'm telling you right now.'"

Carmen contacted HR, believing that they would be more supportive of her need for more pumping time, since "they are in charge of fighting for people's rights in the fields." Instead she felt disappointed in their lack of empathy for her discomfort as she juggled multiple priorities for her limited break time: using the toilet, staying hydrated and fed, and expressing her milk so she would not become engorged and develop mastitis:

Yes, yes, I called. And they [HR] said the same thing. That I should pump during my break or lunch time. But once a day. Not more. I told that person who was a woman, that I used my 10 a.m. break to eat some food. She said: "But that's not my problem..." She said: "You have your lunch hour, which is at noon." I replied: "Yes, but at noon too much time has already passed, my clothes are already wet, I have breast pain because of the excess liquid [milk]... I went over the time when I should have gone to pump" ... "We can't do anything," she answered...What you are doing is your own personal matter and we have no reason to get involved in that." No support. None. The only thing I got from them was feeling disappointed.

Blazing a trail.

Although Carmen knows of women in Mexico who pumped their milk, it was always at home, and with a manual pump. She does not appear to have any coworkers at her job who pump and does not know anyone else who has pumped at work:

In Mexico we are really not accustomed to that [pumping]. The people I know, my co-workers, my relatives and friends don't do that at work. We don't receive that type of support. We don't receive it. There are many women who have had to stop breastfeeding their kids in order to go to work, because at work they don't have the support to pump.

Within-case analysis: Tania.

Tania's interview took place at the home she shared with her husband and children and another family. The original appointment had to be rescheduled because she got off work late that day due to harvesting demands. In the last several years, a labor shortage has impacted U.S. agriculture and many employed farmworkers are expected to work longer hours to meet the demand.

Tania was 16 years old when she emigrated to the U.S. and procured a job harvesting strawberries. Sixteen years and two children later, she was harvesting blackberries. Tania breastfed her first child for two years and planned to breastfeed her second baby for over a year as well. Her son was 4 weeks old when she returned to work, but she was prepared with information on the lactation accommodation law, a battery-powered pump, and support from her WIC breastfeeding counselor. Tania communicated to her female supervisor that she would be pumping at work and felt supported by her. There was no dedicated lactation space at the worksite, so Tania and her husband took their chairs into the plastic-covered hoopouses where the berry bushes are grown, and she pumped in between the rows. Tania was unique among the study participants in that

she worked side by side with her husband, who supported her lactation both at home and work. At the time of her interview, six weeks after she had returned to work, Tania had managed to avoid supplementing her breast milk with formula despite the challenges of pumping on the job.

Honoring culture.

Tania spoke of the love she has for her children and her desire for her son to be healthy as the motivation to continue breastfeeding after she returned to work:

...in my family my sister-in-law returned to work like I did after the cuarentena and I saw that she gave her son formula. And since I can remember, her son has had a cold the entire time. He is very sick all the time. So, I thought: "If I'm going to leave my son, I don't want him to be sick all the time." That's why I said, because I was told that mother's milk boosts your immune system a lot.

Tania has wide support for breastfeeding from family members, friends, her child care provider, and WIC breastfeeding counselor. She especially received support from her husband whom she works alongside while picking blackberries. Their baby was only a month old when Tania returned to work and her husband helped her take care of her personal needs and find privacy to pump:

My husband [helps me], since at work the time they give us to rest is very little, fifteen minutes. He is the one who helps me carry the backpack, the chair I use when I pump, the little machine and everything. He carries everything. I start to pump, and he even helps me eat. He gives me what I eat.

Tania was also appreciative of the support she received from her parents who live nearby in Salinas. "My mom...helps me by hugging my son all the time, taking care of him. Sometimes in the afternoon when we arrive [from work], she grabs him and everything so I can eat comfortably." While Tania did not feel supported to breastfeed by her son's pediatrician, she spoke glowingly of the support she received from her peer counselor:

WIC, yes, because from the day I went there they told me that if I decided to do it [pump] and work, that they would support me in every way. Over there they do give you a lot, they help you so much. That's the truth. But at the hospital, like for example when we go to our appointments, no. They hardly ever tell you anything.

Running the gauntlet.

Like other agricultural workers during the harvest season, Tania endures long days in the field. She often has only one day off per week. Expressing milk adds to her already heavy workload as a mother of small children and a manual laborer:

It's difficult right now because we...have so much work. Now it's many hours, from seven a.m. until seven p.m. We stop at five o'clock...Today I rested [took the day off] because sometimes I'm so tired...But suddenly one day you get dizzy, you extract the milk, you eat at night, you get insomnia...

Tania also speaks of feeling conscious of the stares of coworkers who notice her wet shirt from her leaking breasts, referring to their "morbid curiosity." She and her husband walk far from the rest of the crew, "in the field's furrows," to avoid the stares when she is pumping.

Blazing a trail.

Tania feels validated for her perseverance in pumping at work and serves as a role model for other farmworking women:

I think it's positive because many girlfriends have told me, because I have talked to them and they say that what I'm doing surprises them. But because they don't want to leave them [their babies] while they are so young and not do what I'm doing, they haven't worked...But they see that I can do it and then they say it's easy if I can do it.

She attributes her awareness of workplace lactation law as a factor that supports her decision to pump.

The California and federal legislation that require lactation accommodation for employees are included within the structures, policies, and systems level of SEMBA.

Tania comments that she tries not to take more than the allotted time for her break, but sometimes she takes longer to pump, and she feels the law encourages managers to be more flexible. She also appreciates the instrumental breastfeeding support afforded by WIC in terms of breast pumps and breastfeeding aids, purchases which are authorized for WIC participants by federal and State policy. Although she feels supported by the law, Tania recognizes that without her husband's support to carry her equipment and help her eat, it would be much more challenging to pump. She holds hope that other mothers will have the same kind of support from their partners: "We should help the husbands more than anything and [teach them] that it's not a bad thing for them to help their wives."

Within-case analysis: Nancy.

At her request, Nancy was interviewed at the local WIC office. Nancy emigrated from Mexico when she was 16 years old but did not attend U.S. schools. Both of her children were born in the U.S., and she breastfed the oldest for two years although she did not pump at work for that baby. At the time of her interview, Nancy had been back to work for 7 months as a mushroom harvester, pumping at the workplace for all that time. Like the other participants, she was encouraged to pump at work by her breastfeeding PC who provided her the information and supplies she needed. Nancy spoke to her supervisor about lactation accommodation and although she was given the time she needed to pump, she was not provided with a consistent, clean location. Despite her discomfort with the situation, she was determined to keep pumping until her baby was 2 years old; at the time of the interview he was 10 months old.

Nancy characterized her husband as being very supportive of her lactation at work, although they worked for different companies. Her mother-in-law cared for her

children while she and her husband were working, and she acknowledged the importance of all the support she provided. Nancy was unique among study participants because she worked indoors, but she still faced most of the same challenges as the women working outdoors.

Honoring culture.

Nancy committed to pumping at work because she observed that her oldest daughter was sickly. It seems that Nancy was only able to token breastfeed her at night, a comforting practice with little or no nutritional impact (Labbok & Krasovec, 1990). She did not pump at work for her first child:

And sometimes it hurts because I regret not having tried to breastfeed my first daughter. I didn't make the effort, I didn't make the sacrifice. I just said: "There is no milk, there is no milk." And that's it. I stopped. But I came here to WIC [with current baby] and there was no milk. But they supported me and I had the support of Misses Olga and Petra [breastfeeding PCs], and they helped me pump the milk.

In Nancy's family, breastfeeding was seen as something normal. She has two sisters that breastfed and she compared her milk supply to theirs, commenting that they breastfed better than she because, "I don't have a lot of milk." Nancy also feels supported by both her husband who helps her at home and her mother-in-law who takes care of her baby while she is at work. "And my husband did help me because he got my bag ready and my machine [pump] inside, the little bottles and the ice... And I just carried my bag and went to work because my husband helped me a lot."

Nancy acknowledged that her culture supports breastfeeding and, "It is the best for our children." She also commented that in her Oaxacan culture, mothers breastfeed all the time, presumably while in public as well, despite the criticism: "Oh, that Oaxacan woman is taking out her, they call it *chiche*, right?... and right there her baby is

breastfeeding.” Nancy was also motivated to pump for her second child by the connection with her it afforded:

Yes, it’s difficult, but what motivated me the most was, it made me feel sad to leave my daughter and say: “I couldn’t give her any milk...I need to pump the milk to breastfeed my daughter one more day, and that way I can have milk again so she can have her food.

Running the gauntlet.

Although Nancy felt supported in breastfeeding by her Mexican/Oaxacan culture, she felt her work culture was not supportive. In reply to a question about how she thought farmworking culture affected her decision to breastfeed after returning to work, Nancy replied:

It affects me in the sense that there aren’t too many resources for being prepared. Like that’s something that’s in the past, breastfeeding. Like it’s something that hardly exists. Because at work I noticed it, they don’t accept it very well. Like it’s not a very pleasant thing, it is not very well accepted that a mother is carrying her [pump] backpack and all that, like there is always criticism... “Oh, breastfeeding. Oh.”

Nancy experienced physical discomfort on different levels: the tiredness associated with walking from her car to her work location and back and then additional distance to where she pumped; long workdays tied to harvest needs; the extremes of hot and cold in the work environment, the building temperature manipulated to regulate crop growth; and working in a humid, darkened space with no windows. When she arrived at work, Nancy never knew exactly how many hours she would work. It depended on the orders and was as few as six hours or as many as twelve. Nancy related the story of a coworker who was discouraged from pumping her milk at work due to the physical working environment. Temperature fluctuations, according to some Mexican folk beliefs, affect milk quality (Santos-Torres & Vásquez-Garibay, 2003; Waugh, 2011).

Nancy spoke of the embarrassment she felt when asking for lactation space access. Due to a lack of communication between her male supervisors, Nancy was forced to ask daily for the access she was entitled to by law. The psychological stress she endured only compounded her physical discomfort:

...sometimes I struggle a lot, because they have this little room...that they give us, sometimes it's closed. They have it locked. And they know it. They tell me: "We are going to leave it open for you." But when I arrive, it's closed. I have to wait until someone passes by to tell him: "Oh, could you call somebody to come and open it?" And I don't like it. That's what I don't like because I have to keep telling them: "I'm here, I came to extract milk." I feel like I don't have any privacy.

To add even more to her embarrassment while requesting access to lactation, Nancy related that some supervisors act like they don't know what she is talking about when she tells them she has to express her milk.

...when I tell them: "I'm going to lactate," [they reply], "What is that?" I'm going to extract my milk. Well, I don't know how they understand it, but those ones don't even know what I am talking about...And I feel embarrassed to tell them with different words. And then: "What is that?" "Oh, you can go in." And then, they open it for me. But, things like that. It makes it uncomfortable for me.

When asked if the company had a policy addressing lactation, Nancy related that she lost her copy of the employee handbook, so she did not know. When she requested a new handbook she had not yet been provided one. At the time of her interview, a written lactation policy was encouraged by health organizations including U.S.D.H.H.S. (2011) but it was not legally required for employers at the state or federal level. Although lactation accommodation was mandated if requested by an employee, there was not a requirement for companies to formally advise employees of their right to express milk. Since California labor legislation was revised in January 2020, a written lactation accommodation policy is now required for employers in the state (CDPH, 2021).

In addition to the barriers thrown up by management in accessing her lactation space, Nancy endured stigma from her coworkers, from the discourteous action of someone moving her pumping equipment bag without permission to subtle verbal discouragement, veiled in concern for her health:

...and then, my co-workers: “Oh no. You struggle too much; you have to go over there.” Because it’s far where I pump from where I work. I walk ten to fifteen minutes to get to the place where I have to pump. Then they tell me: “You have to walk all the way there. You don’t take your break properly or your lunch. You have to, now that she [baby] is older, you fed her for 2 months, you fed her for 3 months, stop already.” But no, I say: “No, my daughter still needs it.”

Blazing a trail.

Nancy understood that other mothers were likely not pumping at work because of the same barriers she faced. She felt strongly that all employees should be taught about the rights of breastfeeding workers and that the company should have a specifically designated breastfeeding room, even if it was small:

Because when I just arrived, they put me in a room where there were, they took all the sick people [first aid station]. There is a bed where they take the sick people, because they cut themselves with knives because they work a lot...it’s covered in dust. There wasn’t even one chair. Nothing, nothing. How am I going to extract my milk? There isn’t any place for me to put my...things there because I don’t know this place. If a sick person takes out a band-aid, I don’t know. So, I would like a place like that.... If they had such a place, then people could have their own key, especially for mothers who breastfeed.

The company Nancy works for has operations throughout North America. She feels they should do better in accommodating breastfeeding mothers, especially by improving communication among the supervisors. “They [the supervisors] should commit to respect people if they are going to breastfeed and give them their space. There should be more information because like in my case, the supervisors aren’t trained about having the appropriate place ready.”

Within-case analysis: Gabriela.

Gabriela's job had recently ended for the season when the investigator met her at the home she shared with her two sons. She worked for a large vegetable grower-shipper, packing romaine lettuce in plastic bags in the field. Gabriela's baby, her second child, was 4 months old when she returned to work and Gabriela committed to exclusively give him breast milk. By the time the season ended, she had pumped at the jobsite for eight months in a foldable chair, out in the field. She never asked her supervisor or other company representative for accommodation but stated that her supervisor knew she was pumping and was verbally supportive. Despite challenges such as dealing with wind and dust, Gabriela was determined not to supplement with formula.

Gabriela spoke of the family support she received for breastfeeding in general, and for pumping at work. In fact, her sisters worked alongside her in the fields, and one had preceded her in pumping at work the previous season. Both sisters had a WIC breastfeeding peer counselor to encourage and support their efforts.

Honoring culture.

Among study participants, the eight months Gabriela pumped in the agricultural workplace was the longest period of time. She spoke of the great love mothers like herself have for their children that make them do whatever possible to provide the best – their breast milk. Because she is nourishing her son with her own milk, Gabriela felt that made them closer.

Culture influenced Gabriela's decision to pump at work although, apart from her sister, she knew of no one else, either in Mexico or California, who pumped at work:

I hadn't seen any woman extracting her milk. Where I am from, I am from Oaxaca, the women there breastfeed children almost until they are 3 years old. That's the culture we have over there in Mexico --So, I think that I also carry that with me. That's why I decided to breastfeed my baby during the span of time I told you, which was a year and a half, and that's why I think I also decided to pump my milk at work.

Gabriela had the distinct advantage of being surrounded and supported by her four sisters in her lactation journey. Three sisters worked on the same lettuce crew as Gabriela, and one of them pumped at work during the previous harvest season. A fourth sister was a stay-at-home mom and cared for Gabriela's baby along with her own children. She received nothing but encouragement from them. Gabriela is proud of her family's breastfeeding tradition: "But we have this in our family, because in my entire family nobody has given their babies formula. They always breastfeed. So, that's a family thing. Even if we live in the city, but we don't lose that tradition." In fact, at one point when her stored milk supply was exhausted, a coworker shared some of her own supply of frozen milk so Gabriela would not have to give her son formula.

Although Gabriela's sister had pumped the previous season while working on the same crew, Gabriela needed to evaluate for herself how the process would work for her. Nevertheless, she was determined:

Well, yes, it was a little complicated before going back to work because I didn't know how I was going to do it. But once I got to work, even if it was a little complicated, it was my intention to extract my milk. Yes, even if it was complicated or I felt uncomfortable, I was going to keep extracting my milk at work.

In addition to the support Gabriela received from the sister who had previously pumped, she also spoke of the encouragement and anticipatory guidance she received from her WIC breastfeeding peer counselor. Her sister also had the benefit of a PC:

Yes, they assigned a counselor to me and from the time my baby was born she talked to me constantly. And she always asked me how is the baby, how is the milk going, does he have any problems? And I never had any problems breastfeeding the baby, and she always encouraged me and always asked me: “What have you thought? Are you going to continue breastfeeding? Are you going to extract your milk at work, after you return to work? And she told me that they would respect any decision I make. If I didn’t want to do it, it was okay, and if I did, great. But yes, my counselor was a great help, she is the one who gave me encouragement.

Running the gauntlet.

Unlike the other study subjects, Gabriela described milk expression at work as “not difficult,” despite working 6-day, 55-hour weeks. Whether this description was due to being surrounded by supportive family members and/or her own perceptions, her list of challenges to pumping was noticeably shorter than the other study participants. Gabriela did mention in detail the pumping challenges associated with the weather vagaries of the Salinas Valley, including extremes of hot and cold; calm air or extreme wind; and foggy or rainy weather versus dry. Sometimes, she was unable to pump due to weather conditions and perceived risk of milk contamination:

And yes, there were days when the wind was very strong or we would go out of the field, and the road is very muddy, then the wind would lift the dust a lot, and those times I didn’t extract my milk. I didn’t extract my milk because I was afraid that it [the dust] would get in the milk or, you see, there are many chemicals at work, and I was also afraid that they would get in the milk and that my son would get sick. During those days I didn’t extract my milk.

Gabriela acknowledged that there was curiosity and stares and laughs from some coworkers about her pumping. She felt judged by others but did not pay attention to them because she was focused on the benefit for her son:

Although, there are also women who say: “I am not a cow to extract my milk.” They would say that. But I always listened and kept quiet, I listened and kept quiet because I don’t like to have problems, and even less argue with other women.

Gabriela characterized her female supervisor as having a favorable attitude toward the time she took for lactation breaks, but she seemed disappointed at not being asked if she wanted more time to pump.

Blazing a trail.

Gabriela felt strongly that women thinking about pumping at work should be encouraged more and provided with feedback from mothers who have accomplished it. Her own self-efficacy was increased by observing her sister's success in pumping, and in turn Gabriela wants to encourage others. She would advise other breastfeeding women not to worry about people will say or that it is not doable. She would tell them,

And not to be afraid, not to be embarrassed, to set aside all that and think more about their children's welfare because mother's milk is the best for our children. They should set aside their fear and embarrassment, they should value more what we as women have, mother's milk for our children.

Echoing what other study participants had said, Gabriela shared her opinion on what actions should be taken by her company and the agricultural industry to better support women who wished to pump at work:

I would say to always offer classes to male and female workers, because sometimes it is us the women who attack each other the most. So, I would say that the company should offer them classes about this as well, about lactation and make them see and understand that it's not bad thing, it's not something that could be harmful to them.

Cross-case Analyses: Differences and Commonalities by Theme

In the section below, cross-case comparisons will be made in which commonalities and differences among study participants are identified and discussed, guided by their relationship to the three overarching themes of *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail*.

Differences.

After each within-case analysis was completed, the investigator examined the matrices (Appendix I) to identify differences and commonalities between the five cases. Although each study participant's experience was unique, variations in their attitude and experiences emerged that seemed to influence their level of acceptance of their workplace lactation situation.

Honoring culture.

Family support received by participants at the workplace seemed to contribute to a more positive attitude toward company supervisors, even in the absence of required accommodation. Although none of the employers provided a consistently available, dedicated lactation site, Tania and Gabriela spoke more favorably of their supervisors and the respect they received at work as compared to Nancy, Carmen, and Martha. Early on, the investigator noted that Tania and Gabriela were advantaged by working alongside a close family member. Tania's husband carried their chairs to rest far from the rest of the crew and he helped her navigate eating and pumping during breaks. Gabriela worked on a crew with her three sisters, one of whom had previous workplace lactation experience. This older sister ate lunch with her and helped shield her from the view of coworkers while she pumped. Another sister stayed home and cared for their children. The family cohesion of familismo promotes social and economic advantages, including companionship and communal problem solving (McMurry et al., 2017).

The family support available to Tania and Gabriela appeared to provide a protective layer of security and calm when the participants were most vulnerable - opening their shirts to pump in an agricultural field. Tania especially recognized the merit

of her situation and how her husband's presence discouraged most of the type of negative behavior experienced by others in the sample. In the cases of Tania and Gabriela, the act of family support in the workplace blurred the lines of usually distinct spheres, at the SEMBA levels of interpersonal and work environment.

Running the gauntlet.

All study participants spoke of some degree of negative reaction to their pumping by coworkers and supervisors. Only Martha specifically recounted a positive interaction and how the encouraging words of a female coworker helped her move past her embarrassment to focus on the reason (her baby's health) she had decided to pump.

Carmen stood out for her ongoing *lucha* (fight or struggle) with management, including threats of wage garnishment when she asked for more pumping time and for the overall condescension conveyed by her supervisor and HR. Although varying degrees of gender discrimination were encountered by each participant, Carmen was also at the receiving end of a more extreme form – an attempt at sexual coercion. Her supervisor started out providing her enough time to travel to a suitable lactation space and pump, but when it became evident that he was interested in her and her teenaged daughter in a more intimate way, and they did not return the interest, her pumping time was decreased. Carmen was also criticized by fellow crew members who believed the accommodation she was originally given was a special favor.

It is also noteworthy that Carmen did not initially back down when fighting for her accommodation, but as she was hindered, she decreased her pumping episodes. When she told company representatives she was having problems with engorgement due to insufficient pumping, they were dismissive and told her it was not their problem. Carmen

was also promised a pop-up tent for pumping which she could situate closer to the field to save time. However, it was never delivered to her and she did not want to risk getting in trouble by asking again.

Blazing a trail.

Except for Carmen, none of the participants took their concerns about how they were being accommodated beyond the crew level. Carmen recognized that supporting breastfeeding mothers at work had implications that reached beyond herself when she told HR staff that supporting breastfeeding mothers ultimately saves health care dollars for the new citizens of this country. Unfortunately, she felt that her company was unsupportive although they had a lactation policy. She told her breastfeeding PC at WIC that she hoped by speaking with the investigator it could help other mothers in the future.

Study participants conveyed that they were pumping at work to avoid or minimize the amount of supplemental infant formula they had to provide to their babies. Three of the five women were at some point unable to pump enough milk to fulfill all their babies' needs while they were away at work, but only Gabriela admitted to supplementing with donor breast milk from a coworker instead of feeding formula. The investigator has learned through years of working with families that informal milk sharing arrangements are not uncommon. However, due in part to an expectation of criticism, mothers may not share their experiences with health care professionals (Tomori, Palmquist, & Dowling, 2016).

Commonalities.

As illustrated in Table 2, study participants were a fairly homogeneous group, from a sociodemographic perspective. The initial goal in sampling was for maximum

variation, but due to the boundaries set by the investigator and the difficulty of recruitment it was a challenge to find participants who were significantly different from each other. Coincidentally, all five women were in their thirties (mean age = 34.2; range 32-38) and had at least one other child who they had breastfed for at least 6 months; in four of the five cases, the participants breastfed a previous child for one to two years. At the time of their interview, only Carmen and Martha were providing any formula to their baby although they spoke of their efforts to avoid this supplementation.

All participants were born and educated in Mexico, and only Tania and Carmen achieved more than a sixth-grade education. Three of the five mothers had the experience of birthing and breastfeeding a baby in Mexico in addition to their experience with a U.S.-born child. Their duration of residence in the U.S. ranged from two years for Carmen to 20 years for Nancy (mean = 10), yet there was no stated difference in acculturation level as assessed by the shortened version of the Short Acculturation Scale for Hispanics (SASH), (Marín, et al., 1987) described in Chapter 3.

Honoring culture.

All participants spoke of pumping as a means of providing the best nourishment for their babies. Health considerations and the love shared with their baby were the main reasons cited for pumping at work. Also mentioned was the suffering that both mother and child would experience if they did not pump, from the literal pain of engorgement to the emotional distress of not being able to provide breast milk. Most participants spoke of setting aside their shame to pump in their mixed-gender worksites and of the sacrifices they made to their own comfort, whether physical, emotional, mental, or financial. Their words and actions reflect the cultural values of marianismo, a concept prescribing female

Mexican gender-role expectations that include self-sacrifice, virtue, submissiveness, being the pillar of the family, and self-silencing to maintain harmony (Gibbons & Luna, 2015; Greer et al., 2013).

Participants also spoke of their family's approval and support, be it emotional (encouraging words) or instrumental (helping prepare the pump and other breastfeeding aids) for milk expression in the workplace. Breastfeeding for them was a cultural norm and in so many words they spoke of carrying their breastfeeding culture with them from Mexico to the U.S. Participants received support from community organizations as well, particularly WIC. All of them mentioned their WIC breastfeeding peer counselor, situated in the SEMBA interpersonal sphere of influence as a source of social support, including educational, emotional, and instrumental support. In most cases, it was the WIC counselor who first informed them of or reinforced their knowledge of the right to lactation accommodation in the workplace.

Also situated within the interpersonal sphere of SEMBA, child care providers were an important member of the study participants' support system, characterized by all the interviewees as supportive of their lactation at work. Nancy's mother-in-law and Gabriela's sister cared for their babies, and Tania, Carmen, and Martha hired acquaintances to babysit.

The study participants were asked how their health care providers supported breastfeeding and their return to work. None of the women's doctors provided any anticipatory guidance or discussion of lactation law and how they might combine breastfeeding and paid work. Tania and Gabriela felt they received no encouragement for breastfeeding at all while Carmen, Nancy, and Martha's doctors gave some general

affirmative support for breastfeeding, for example, “The baby breastfeeds? Oh, yes, ... very good that he is drinking mother’s milk [Nancy].” While Carmen consulted with a generally supportive physician about her engorgement and plugged ducts, she did not feel comfortable enough to disclose how work issues were contributing to her breast problems.

Running the gauntlet.

Among study participants, the most positive descriptions of supervisor support were being “in favor of it [pumping]” (Gabriela) and “they don’t say anything” if she goes over her break time (Tania). Neither woman was provided the legally required access to a private space and they had to find a location on their own. All the participants alluded to their discomfort at the lack of privacy, either by directly talking about modesty and how to “hide” from their coworkers (Tania, Gabriela); having to burn up break time to try to go to a private area (Carmen); being forced to ask her male supervisor daily for permission to enter the lactation space (Nancy); or acutely feeling the eyes of the workplace on her and feeling intensely self-conscious (Martha).

While Gabriela and Tania’s supervisors gave them affirmative support to express their milk, the other participants experienced overt hostility and stigmatization. Carmen faced sexual harassment and threats to dock her wages and Nancy encountered micro-aggressions when she requested use of a room to pump. Both Gabriela and Martha were compared to cows for pumping. Based on the women’s own words, none of the field supervisors and, in at least one case, Human Resources, had a clear understanding of the legal requirements for lactation accommodation.

Each of the participants spoke of the stigma from coworkers they faced for pumping at work, in the form of questions, stares, taunts, discouragement, and having their equipment moved. Although some seemed to struggle more than others with the daily challenges they faced, all spoke in terms of staying committed and working through it for their baby: keeping their eye on the prize.

The challenges presented by the physical component of the SEMBA work environment level were mentioned by all the study participants. Not only were most of them subjected to the relentless biting afternoon wind common to the Salinas Valley, but the women also worried about the safety of their milk. They spoke of the struggle to find a sheltered space to pump for privacy but also so their milk would not be contaminated by dust. Two of the women voiced concerns about milk safety in terms of maintaining a suitable storage temperature. On warmer days, melting ice in their storage bags represented a risk to their breast milk.

Long days of repetitive manual labor presented another challenge to milk expression, as voiced by study participants. It was common for the mothers in the study to work a 10- or 12-hour day, pick their children up from child care, and then come home to prepare dinner, attend to other home tasks, get everyone ready for bed, only to wake up hours later for the same cycle. This second shift of labor, first introduced in Chapter 2, adds to the exhaustion already faced by farmworking women. The ideal Mexican mother sacrifices her own needs and happiness for the greater good of the family, but the power of breastfeeding fulfills herself as a mother, giving her a sense of personal womanliness in the attainment of *marianismo* (Greer et al., 2013).

Blazing a trail.

The participants all spoke of staying committed to their goal of pumping their breast milk at work. They understood that to maintain their milk supply and extend their breastfeeding duration, milk expression in the workplace was necessary. They recognized themselves as trailblazers: they were the first of their social circle and work crew to express milk in the agricultural workplace, except for Gabriela, whose sister had pumped the previous season.

Four of the five women spoke of being empowered to pump at work due to their knowledge of the law, mostly communicated to them by their WIC breastfeeding peer counselor. Trust in the law helped study participants ameliorate criticism from coworkers and scrutiny from supervisors, knowing that their break time was protected while pumping their milk.

Summary

In this chapter, the investigator presented the way in which the words of each farmworking woman relate to the overarching three themes that emerged from their collective interviews, *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail*. In varying degrees, all the women received family support and felt the positive influence of Mexican culture that buoyed them to persevere through the many challenges they faced. At the same time, study participants shared their discomfort with the stigmatization of pumping by coworkers and expressed their disappointment with company management not meeting their expectations of lactation support. The women expected more time and adequate space to pump, but in fact none seemed to be accommodated in a manner consistent with the law. Since this is the first known study to examine the workplace

lactation experience of farmworking women, participants helped bring to light an understanding of how they navigate milk expression in a mixed gender, mostly outdoor setting.

In the next and final chapter, there will be a discussion of the theoretical understanding of the phenomenon of breastfeeding and pumping milk while employed as an agricultural field worker and how the overarching themes of *Honoring Culture*, *Running the Gauntlet*, and *Blazing a Trail* all fit at multiple levels of the SEMBA model. Findings and implications will be summarized and finally, a conclusion with research, policy, and practice recommendations will be advanced, based on this research.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS.

The plight of mothers laboring in U.S. agricultural fields recently came to the attention of none other than National Geographic magazine. In a 2021 article titled, “The persistence of pay inequity,” author Helena Maria Viramontes writes of her awakening in college that some kinds of work and workers were seen as less than others. Reflecting on her experience picking grapes in California with her family, she quotes the observation of the National Farm Worker Ministry, that women farmworkers are “arguably the most exploited workers in this country, even more vulnerable than male farmworkers.” Now a writer and professor of English at Cornell University, Viramontes shares her observations about the barriers faced by Latina farmworkers who endure not only the physical challenges of field labor, but also an environment of gender-based harassment. Little has changed for farmworking mothers in the 50 years since she first came to understand that the work of some was less valued than others.

The purpose of this qualitative case study was to examine the experiences of Mexican immigrant women who expressed (pumped) their milk in the California agricultural workplace. Using semi-structured questions guided by a socio-ecological model (SEMBA) introduced in Chapter 2, the investigator interviewed five farmworking women who fit the study parameters. Chapter 4 presented their stories as they spoke of both enablers and challenges to their success at pumping their breast milk at work. Three overarching themes emerged through the content analysis of the participants’ interviews: *Honoring Culture* (enabler), *Running the Gauntlet* (challenge), and *Blazing a Trail* (enabler).

Honoring Culture is a theme that transcends the role of study participants as women, mothers, family and community members, farmworkers, and Mexicans. *Running the Gauntlet* originates from the physical, psychological, and emotional toll that results from engaging in a practice that is virtually unknown within the farmworking population, thrusting domestic and work-life spheres together. *Blazing a Trail* represents the efforts and commitment of women who were among the first of their social sphere to express their milk in the agricultural workplace.

This chapter begins with an interpretation of the thematic findings within the levels of SEMBA (Figure 1), as derived from cross-case analyses (Appendix I). Unsurprisingly, there is great interrelatedness across levels of SEMBA as well as between themes. The second section of Chapter 5 addresses this study's implication for nursing and health innovation in terms of policy, education and practice, and direction of future research. The third section presents study limitations, and the fourth section discusses dissemination. Finally, a summary closes out the chapter.

The overarching research question of the study, introduced in Chapter 1, was: What is the experience of breastfeeding women with milk expression in the agricultural workplace?

Sub-questions included:

- 1) Why and how do Mexican immigrant mothers decide to express milk in the agricultural workplace?
- 2) What are the factors at each level of the socio-ecological model that farmworking women perceive as enablers or challenges of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

- 3) What are the needs of these mothers and their priorities for support at each level of the model?
- 4) How might resources be targeted to enable workplace milk expression for these mothers?

Interpretation of Findings by SEMBA Level and Interrelatedness of Themes

Individual level (mother-child dyad).

This study engaged the participants as individuals. Decisions about breastfeeding are never a matter of only personal choice, but are framed by wider contexts, as illustrated by the SEMBA framework. The principles of socio-ecological models suggest that creation of environments favorable to change supports an individual's adoption of healthy behaviors as a reciprocal interaction between behavioral, personal, and environmental factors (Sharma & Romas, 2012).

The theme of *Honoring Culture* was strongly represented at the individual level under the categories of *living up to the cultural values of marianismo* and *pumping for baby*. *Marianismo* as a category of *Honoring Culture* is also represented as an enabling force at the community and interpersonal levels and will be discussed in more detail in the following sections. The category of *overcoming adversity* within the theme of *Blazing a Trail* also appears at the individual level, as does *risking health* within the theme of *Running the Gauntlet*.

The concept of marianismo and its influence on gender roles was first introduced in Chapter 2. Breastfeeding farmworkers have to ignore the demands of their female bodies that are not cooperating with the crew's break schedule as they leak milk for all to see. Yet, they suffer physical discomfort because of expectations often placed on girls at

an early age, including self-sacrificing behaviors on behalf of their child and family. Study participants mentioned not only the physical discomfort they experienced when unable to pump, but the emotional discomfort (shame) they felt from a lack of privacy. Shame results from violating a shared, objective ideal (modesty, a tenet of marianismo) that leaves one feeling censured and violated (Babcock & Sabini, 1990). Offense on their privacy included coworkers verbally criticizing their pumping, name calling, or staring at participants, even when they tried to elude notice. The other side of this coin is stigma and discrimination which will be addressed later in this chapter.

The act of breastfeeding, nourishing one's child with their own milk, empowers women and facilitates the mother-child bond, the interconnectedness that is central to marianismo. A woman's inner strength is fostered by the symbiosis of caring for herself and others, resulting in a gain of confidence (Greer et al., 2013). Breastfeeding self-efficacy has been described by Dennis (1999) as a mother's confidence in her ability to successfully breastfeed her infant, and with SEMBA self-efficacy is characterized as an enabler for milk expression. All study participants were experienced and confident breastfeeders. Yet, their challenge was not a lack of breastfeeding efficacy in the general sense, but their confidence to walk into a male-dominated worksite and pump their breasts in a wide-open, dusty vegetable or fruit field.

Bandura (1977) writes of self-efficacy as a person's belief about their capabilities to perform a specific task or behavior. In the case of our five mothers, how is their self-efficacy for such a challenging task acquired? Bandura states there are four principal sources: performance accomplishments (each mother had breastfed at least one other child before trying to pump at work for their current child, thus feeling empowered to

continue); vicarious experiences (only Gabriela had a mentor, her sister, but the others were shown a video by their WIC breastfeeding peer counselor (PC) on how it could be done); verbal persuasion (by family members and PCs, and a coworker in Martha's case); and physiological states (lactation mandates that you express your milk during a ten hour work day or risk serious medical complications). Participants in this study spoke often of staying committed despite the adversity they faced, eventually acclimating to a hostile work environment, although not necessarily mastering it.

All participants mentioned individual level health risks, a category within the theme of *Running the Gauntlet*, which were interwoven with work environment factors and impossible to disentangle. The biological need for more frequent lactation breaks and time to travel to the pumping location was often mentioned as a challenge, as were the women's feelings of exhaustion due to long workdays. They also stated concern for the safety of their milk on hot or windy or particularly long work days. In some cases, there was a trade-off: more time to pump meant less time for much-needed meal, bathroom, and water breaks. Participants spoke of engorged and leaking breasts and wet shirts, consequences of inadequate break time to express milk. They spoke of milk supply concerns due to few opportunities to pump, whether due to missed breaks, bad weather, or inadequate time to both feed themselves and pump. Additional work environment factors are discussed later in this chapter.

Ultimately, milk expression in the agricultural workplace is a love story which sits squarely in the individual sphere (mother-child). The women in the study spoke of giving their best for love, pumping for their baby's health, and in some cases suffering and setting aside shame, while sacrificing their own needs for their child. One study

participant, Martha, speaks to the challenges she faces:

But I say it again, it's a struggle [lucha] for a mom that works, because it would be so easy to say in spite of the advice from WIC, the advice from the doctor, the nurse, if I say look instead give me the cans of milk, that would be so easy, but it's my own consciousness that I want him to [breast]feed as much as possible.

The investigator closes this section with a visual that represents *luchadoras*, female contestants in the *lucha libre* style of professional wrestling, seen as a modern-day superheroes. They stand for pride and honor as they break down societal barriers (Gallegos, 2021), not unlike the study participants who fight against the forces of their working world, all the while keeping their babies as the priority. Throughout this conclusion section, this metaphor of *la lucha/luchadora* is referenced.

Figure 2.

Luchadora and Her Child



Note. ©Patrick Jasim, *Luchadoras* movie

Interpersonal level.

The interpersonal sphere proved a rich source of both negative and positive influence on study participants. On the enabling side, the theme of *Honoring Culture*

included the categories of *marianismo*, and *family* and some types of *community support*, while an interpersonal challenge presented as coworker stigma. The enabling theme of *Blazing a Trail* included the category of *advocating for her peers*, present and future.

Family and partner support.

All study participants spoke of receiving emotional or instrumental support from their families for pumping their milk at work. For example, the women spoke of belonging to a breastfeeding family and feeling supported for pumping. Carmen and Nancy's families helped them pack their pumping equipment in the morning before work. However, Tania and Gabriela set themselves apart from the other participants by reporting fewer challenges to pumping at work. This most certainly could be attributed to the presence of family support on the job: Tania's husband picked berries alongside her, carried her chair and breast pump, and helped her eat her lunch. Gabriela worked alongside her three sisters, including one that had pumped the previous year and who helped her find privacy. Tania and Gabriela did not seem as discouraged with the overall lack of worksite support as Carmen, Martha, and Nancy. Was it because of the family support, that is, supervisors tread lightly and want to appear accommodating because there are witnesses? And/or did the women feel more relaxed with the pumping situation, knowing that family support was nearby?

Coworker support.

Coworker support, or rather the lack of, was a challenge for milk expression in the workplace. Only one of the women, Martha, specifically mentioned a non-family coworker encouraging her to pump. In fact, all participants reported that their coworkers were mostly a source of annoyance, stigma, and discouragement, rather than support.

This speaks to the sample's self-efficacy that they were able to persevere with minimal levels of coworker compassion.

Gabriel et al. (2020) writes about the buffering effect of coworker breastfeeding compassion on the distress experienced by a lactating woman at work. One or more coworkers may exhibit understanding and sympathy to a lactating employee that reduces her suffering from stigma and harassment. Compassion entails specific acts aimed at lessening an individual's distress, as in the case of a coworker helping Martha put aside her embarrassment to pump, and female supervisors offering appraisal support to Tania, Martha, and Gabriela, acknowledging their need for additional time for pumping. In a cross-sectional study of 500 working mothers, researchers found that female coworker support positively affects their self-efficacy to continue breastfeeding (Zhuang et al., 2019). Self-efficacy is described under "Individual level" in this chapter. While the participants did not receive the support from coworkers they deserved, they were blazing a trail for others, for some of their luchas (struggles) will make it easier for others.

The theme of *Running the Gauntlet*, specifically the category of *feeling stigmatized*, was well represented as a challenge to participants at the interpersonal level, via interaction with coworkers six days per week. The term "running the gauntlet" refers to the modern usage of the phrase that refers to going through an unpleasant experience in which one is attacked and criticized (Macmillan, n.d.). In the case of lactation accommodation in the field, mothers must run the gauntlet of stigma, harassment, dirt, and physical discomfort to name just a few obstacles faced during their day.

Stigma and hostility.

There were various types of stigma and hostility experienced by all participants

from both coworkers and supervisors, but hostility from supervisors was conceptually different due to the power differential and will be addressed in the work environment discussion. Stigma, according to Cambridge Dictionary (n.d.), is a “strong lack of respect for a person or a group of people or a bad opinion of them because they have done something society does not approve of.”

A detailed conceptualization of stigma as a sociological phenomenon was described by Goffman (1963) as someone having an appearance, condition, or characteristic, or making a behavioral choice outside the norm. The stigma relationship is one between an individual and a social setting with a given set of expectations or worldview. A certain behavior or attribute may be acceptable in one social setting but not in another; when someone acts outside the normal values, stigmatization takes place (Goffman, 1963). While stigmatization is often grounded as an attitude toward an attribute that differs from the norm, hostility is characterized as an occasion when someone is unfriendly or shows that they do not like something (Cambridge Dictionary, n.d.). Specifically, a hostile workplace is of an intimidating, antagonistic, or offensive nature (Merriam-Webster, n.d.).

The concept of stigma in relation to breastfeeding, a health-promoting behavior, is linked to controversy particularly regarding breastfeeding in public, extended breastfeeding (more than one year), and pumping milk at work (Bresnahan et al., 2018). Many mothers, from white collar office workers to employees engaged in manual labor jobs (now documented to include agricultural workers), have reported negative attitudes from coworkers.

In a cross-sectional survey of 1000 workers, one of four coworkers indicated moderate to strong stigma against providing support for pumping employees and saw pumping breaks as unfair. Coworkers felt they would have to pick up the slack for the missing (pumping) team member and this may breed resentment. The pervasive effect of stigma spreads disapproval through negative verbal and nonverbal messages (Zhuang et al., 2018). Stigma is communicated not only to the offender but also to everyone else and serves as a guide for who may be stigmatized and why they deserve it (Bresnahan, Zhu, Zhuang, & Yan, 2020). Study participants recounted communication of stigma ranging from coworkers complaining about the unfairness of lactation breaks to seemingly innocuous comments that nevertheless indicated disagreement with pumping at work. For example, Gabriela experienced passive-aggressive comments suggesting she had pumped long enough, cloaked in concern for her welfare: “Stop already, stop extracting your milk because you are going to get sick, ... They were always putting ideas in my head, so I wouldn’t do that at work anymore...” Nancy was also discouraged by coworkers who told her a few months was long enough to pump.

Questions sometimes carried an undercurrent of criticism, as in the case of Gabriela while she was pumping: “That’s why they looked at us, like surprised, weird. ‘What are you doing?’” Other coworkers did not try to hide their disapproval, according to Carmen: “Why do you get special privileges, extra paid break?” Coworkers compared Gabriela and Martha to a cow, communicating the stigma of bringing lactating breasts to work, disguising their censure as humor. Goffman (1963, p. 27) writes of the stigmatized person’s exposure to invasions of privacy and how “strangers may feel free to strike up with him, conversations in which they express what he takes to be morbid curiosity about

his condition, or in which they proffer help that he does not need or want.” Tania used nearly the same words over a half-century later to describe stigmatization by coworkers as they stared at her leaking breasts: “...my co-workers, I think if they see that I’m wet, there is a morbid fascination and all that...”

Within U.S. culture, partial displays of breasts when done for product advertising is acceptable because in this milieu the breast is conceptualized as sexual. The sexuality surrounding the breast is so deep-seated that the sight of engaging the breast for a nonsexual act (breastfeeding) in a public venue, e.g. restaurant, store, worksite, etc., causes concern, disgust, and anger. Many people simply are unable to redefine the breast as nonsexual in this context and policymakers who advance lactation support are fighting a perception that public breastfeeding is akin to public sexuality (Norwood & Turner, 2013).

Another source of stigma attached to breastfeeding, described as the “ick” factor, is the disgust and embarrassment some people experience when thinking of others’ bodily functions (Zhuang et al., 2018). Many critics of breastfeeding also choose to ignore the distinction between public breastfeeding, a source of nourishment, versus public urination, defecation, or elimination of other bodily fluids (Bresnahan, 2020). Discourses positioning female bodily processes as problematic have implicit messages for breast milk as well as for menstrual blood. Views of breast milk, however, are more ambiguous. The traditional, very positive image of the breastfeeding mother is confusingly juxtaposed with the highly sexualized view of female breasts and the negative connotation of leaking breasts staining clothes (Bramwell, 2001). Both Carmen and Tania mentioned feeling self-conscious and uncomfortable due to their wet shirts.

In a study among low-income Mexicans, the authors reported that breastfeeding in public is stigmatized as something for poor, rural, and Indigenous women (Swigart et al., 2017). The participants noted that people who breastfeed in the street are known as *marías*, the stereotypical rural Indigenous women that carry their babies in a *rebozo* or shawl. This finding echoes Nancy's words, as mentioned earlier, that, "... 'She [Oaxacan mother] takes out her *chiche*, ' they say, and right there [in front of everyone] her baby is breastfeeding." Nancy understood the disapproval by mainstream Mexican society of public breastfeeding and its association with people of lower socioeconomic levels.

Low-wage earners especially may have a difficult time managing both breastfeeding and paid work due to employment circumstances, such as hourly jobs with limited break time, lack of facilities for pumping and storing milk, or limited support from employers or coworkers (Kozhimannil et al., 2015). Because of the substantial barriers, low-income and single mothers are less likely to initiate breastfeeding and to breastfeed for as long as medically recommended (Morris et al., 2019).

Negative behaviors, including comments about lactation, are inherently related to gender and can therefore lead to unlawful gender harassment. Although coworkers were major sources of sex-based stigma and discrimination, a more comprehensive discussion on sex-based harassment and lactation discrimination will be discussed in the work environment section.

Peer support.

Apart from the WIC breastfeeding peer counseling program, the study participants did not report other forms of peer support as enablers of milk expression in the workplace. All study participants were referred to the investigator by a WIC peer

counselor (PC). This was not surprising, since PCs often have longstanding relationships with breastfeeding mothers and offer instrumental, informational, appraisal, and emotional support (Dennis, 2003). This support is reflected within the theme of *Honoring Culture*, in terms of using resources in the Latino community for the benefit of family and the wider social network. The PC program resides in a space between the community and interpersonal level. Although the local WIC program is in the SEMBA community sphere, the investigator situated WIC PC support in the interpersonal sphere with their clients. This is due to easier accessibility, regular contacts that are integral to the program, and formation of deeper relationships compared to the less familiar and frequent interactions shared with other WIC staff.

In the Central California region where the study was conducted, many WIC participants work in agriculture and each PC either worked in agriculture themselves or a family member was employed in the industry. When the investigator initially launched the study recruitment, a few months went by without any contact from an interested party. However, when the PCs began to provide study flyers to farmworking mothers who borrowed WIC rechargeable battery-powered pumps, interest increased.

Formal peer support programs are effective and should be part of a multifaceted effort to promote breastfeeding initiation and duration. Although many studies have demonstrated positive relationships between PC program participation and breastfeeding duration, none of the studies reviewed for this research project specifically targeted women of Mexican descent, nor addressed women in manual labor jobs. A unique feature of the local WIC program that provided breastfeeding support to study participants was that the PCs were middle-aged women, most of them grandmothers. This situation was

not planned as such since breastfeeding PCs are traditionally young mothers like their clients, but the employment structure of the WIC agency influenced who was available for the PC role. However, the PCs were peers in terms of culture, language, and prior experience with breastfeeding and lactation accommodation in the workplace.

Child care providers.

The value of a trusted child care provider who is affordable, invested in the children in their charge, and supportive of parents' breastfeeding is immeasurable. For this discussion, the participants' child care providers are considered enablers of milk expression in the workplace, their role falling under the theme of *Honoring Culture*, as they support their fellow community members in feeding their children. Study participants expressed appreciation for breastfeeding support by the women who cared for their children. Some informal child care providers are uncomfortable with or refuse to feed mothers' pumped breast milk, an issue shared with the investigator by various WIC participants and documented in the literature (Schafer et al., 2021; Witters-Green, 2003).

Two participants, Gabriela and Nancy, had family members caring for their children, and the other three women engaged acquaintances in whom they had great confidence. The participants' stress level at work was surely reduced with the knowledge that their children were well-cared for and fed their mothers' own milk. As Carmen stated, "Yes, yes. I leave for work very relaxed knowing that this person takes very good care of him [baby]."

Many farmworking or other low-wage earning families are unable to access licensed child care providers who follow state guidelines supportive of breast milk feeding, as described in Chapter 2. A recent County ballot measure that would have

instituted a parcel tax to enhance and increase access to affordable child care failed although other school initiatives passed (Ballotpedia, 2022). Access to quality child care must remain a priority for local action.

Community level.

Health care providers.

It is noteworthy that health care providers (HCP), embedded within the community SEMBA level as well as the theme of *Honoring Culture* (and category of *community support*), were not seen by study participants as major promoters of breastfeeding. While not detractors of lactation accommodation, in most cases HCP influence was neutral and provided at most appraisal support, not informational or instrumental. ““The baby breastfeeds? Oh, yes, oh, okay, very good, very good that he is drinking mother’s milk (Nancy).”” None of the participants reported receiving anticipatory guidance from their providers on lactation law and pumping in the workplace.

Few doctors realize how powerful their breastfeeding support could be with the proper training and by asking relevant open-ended questions (Radzyninski & Callister, 2015; USDHHS, 2011). In the medically underserved region where this study was conducted, primary care providers serving the farmworking population have little time to spend with individual patients. However, it was clear that mothers in the study appreciated whatever encouragement they received from their doctors. Conversely, participants who did not feel engaged or encouraged by their providers were disappointed by the lack of support, especially in relation to lactation in the workplace: “They don’t give you, they don’t want to tell you to breastfeed... They do say that mother’s milk is

good... But they don't tell you: 'Give it to them, pump.' No, no, they don't provide information (Tania).”

Cultural norms.

Mexican and U.S. cultural beliefs and practices related to breastfeeding and lactation, introduced in Chapter 2, are ever-changing and include technological advances in breast pumps, global shifts in feeding practices, influence of social media, and legislative changes to immigration policy and pregnancy/lactation-related leave and workplace accommodations. Cultural norms support breastfeeding but not necessarily breastfeeding in public or lactation in the workplace. In the community sphere, *Honoring Culture* enables milk expression in the workplace because of the value associated with the baby's health but mothers are also challenged by the stigma against lactating breasts that need to be uncovered (even if hidden) to be pumped.

The transcendence of marianismo in relation to gendered expectations in the workplace, including the role of milk expression in the agricultural industry, is discussed earlier in this chapter within the context of the individual (mother-child) sphere of SEMBA. The concept of marianismo was never discussed with the participants, although they were most likely aware of its influence in their everyday lives and schooled from a young age in the expectations associated with it.

Throughout North American mainstream culture (U.S. and non-Indigenous Mexico), there is a disconnect between food production for infants (pumping) and cultural reverence for babies and motherhood. Breasts/pumping should be hidden. Breastmilk is seen as a hazardous substance that coworkers do not want stored in communal refrigerators. U.S. culture promotes the consumption of milk products from

cows, goats, sheep, or other species, but human milk retains the yuk factor. As the former breastfeeding coordinator for an organization of over 5000 employees, the investigator was contacted regarding a concern of someone leaving their washed pump parts on the counter. Her response was that employees are supposed to put their dishes away, whether they held spaghetti or breast milk.

As the world becomes more commercialized, breast milk may be viewed as hippie or peasant food, depending on your country of origin. There are conflicting emotions, guilt from women who did not or could not pump, so they criticize those who “try harder” for their babies. Fathers want their children to receive the magical properties of breastmilk, but they do not want their women to show even a hint of an exposed breast. Laws of lactation supply and demand are not well understood by most, that failure to relieve the breasts, either by a baby or pump/manual expression, results in health endangerment and risk to the milk supply. As a culture we are conflicted about the lactating female body moving between various spaces, work, home, and public places.

Work environment level.

At the work environment level of SEMBA, the study participants were met with cold, hard challenges, and isolated words of compassion from female supervisors that did not lead to material change of circumstances. Every day at work was a *lucha*, a term used by the Latino civil/human rights community fighting against injustice. It was obvious participants were exhausted by the daily psychological and physical drudgery of having to pump in addition to work and other required self-care behaviors.

The participants experienced stigma and hostility with coworkers at the interpersonal level, but at the work environment level, with a change in the power

differential, more challenges were added to the gauntlet: denial of access to lactation space and time, sex-related harassment, gender discrimination, lactation discrimination, retaliation, and powerlessness.

At the time of the study, lactation accommodation was required only if requested by an employee, but there was no mandate for companies to advise their employees about their rights. Since legislation was enacted in January 2020, a written lactation accommodation policy is required for employers in the state of California (CDPH, 2021). Carmen mentioned how easy it would be if the company just told her about the place to pump and everyone knew, a sentiment echoed by Nancy who was also frustrated by the lack of an established pumping location. Although Gabriela, working at a large multinational corporation “doth protest too much” by saying everything was going well, and “it’s easy,” she still wondered why her supervisor did not offer her extra time to pump. All these scenarios point to lack of access, much of it caused by the lack of communication inherent in the power differential between management and field worker.

Denial or lack of access.

Denial of access versus lacking access is a nuanced difference. Prior to the 2020 California labor code revision, a company could credibly state that they were not denying access to lactation accommodation if a woman had not specifically requested it. For example, the investigator asked the safety officer of a large, international produce company how lactation accommodation was handled through HR. The safety officer replied that the company would not provide information on the lactation law unless an employee specifically asked. Just like for any other accommodation, such as a physical disability, the lactating employee had to put in a request through HR. This situation

reflects a sin of omission rather than of commission; that is, a lack of access rather than a denial of access is still no access.

Nancy's company provided an employee handbook, reportedly with a lactation policy. When she lost her copy and asked for another, she said that they did not give it to her. So she felt helpless not really knowing what the company's guidelines were on accommodation. Again, lack of access (to information) is denial of access.

Even with laws and policies now in place, many mothers in the mostly immigrant agricultural workforce are unaware/underinformed of their lactation rights. Unless there is a complaint, the CA Labor Commissioner generally does not investigate infractions of the law (personal communication, Salinas, 2020).

Lactation discrimination.

Lactation discrimination, first introduced in Chapter 2, impacts women of all socioeconomic levels but disproportionately affects low-wage workers, who are more likely to be women of color (Morris et al., 2019). Discrimination, according to the Oxford Dictionary (2022), is “the unjust or prejudicial treatment of different categories of people or things, especially on the grounds of race, age, or sex.” Stigma is a lack of respect for someone who has done something unacceptable to the group or has an appearance outside the norm; censure or discriminatory behavior follows. Although there are opportunities for coworkers to discriminate, supervisors and managers tend to have the power for lactation discrimination.

Lactation discrimination directly affected study participants: denying pumping break requests from employees who were in pain and leaking milk; refusing to provide privacy; leaving workers to pump milk with their breasts exposed to coworkers in

physically unsafe conditions. Other forms of discrimination that were recounted to the investigator during her employment at WIC included farmworkers being told they had to walk a quarter of a mile to pump in their car, or being coerced against taking a lactation break that would disrupt the schedule of coworkers who wanted to get off early.

Pumping breast milk draws attention, via pumps, coolers to store milk, and time away from work duties to an employee's role as a woman and mother. Consequently, pumping makes mothers vulnerable to the negative assumptions they face that they are less competent employees (Morris et al., 2019). They are also painted as women who are willing to bare their breasts in public, even if for the nourishment of their child, flouting the social norm of modesty. Looking through the lens of stigma and discrimination is extremely important for this study and cannot be disentangled from many other issues discussed in this report, e.g. feminist and critical race theory, shame, and gender-based/sexual harassment.

Sexual harassment.

In the Central Coast of California, more than a quarter of all field workers are women, working in a variety of jobs: picking berries, cutting broccoli, wrapping lettuce on a moving machine, hoeing weeds, etc. They cover their bodies with layers of clothing, including hats and bandanas covering their faces and heads (pre-COVID-19), not just to deter the wind and elements and prevent darkening of their skin, but to avoid sexual attention and harassment.

The investigator spoke specifically about sexual harassment to only two of the study participants, due to her inexperience with interviewing and lack of confidence asking about it in Spanish. Sexual harassment is an occupational hazard of farmworking

women (Waugh, 2010) and as Carmen told her, lactation harassment goes hand in hand with it. Undocumented workers, and low-wage earners in general, are extremely vulnerable to exploitation, but women of color are particularly susceptible to harassment. Questions about sexual harassment were not part of the semi-structured interview questions, but in retrospect the investigator should have asked participants about how they thought workplace pumping might relate to sex-based discrimination or harassment.

During content analysis, some codes that proved challenging were related to sexual harassment and stigma. The investigator spent some time trying to differentiate the types of sexual harassment and came across an online article with an explanation of related terms and behaviors (Cook, Cortina, & Koss, 2018). Although the participants did not disclose any sexual violence or physical assault, there was certainly sex-based/sexual harassment of many forms, including lactation discrimination, a form of gender discrimination previously mentioned.

There was the blatant quid pro quo sexual coercion experienced by Carmen and her teenaged daughter. If they gave in to the supervisor's advances, Carmen could keep her extended pumping breaks. They declined and she lost pumping accommodations that were grounded in California law. She was most likely viewed with innuendo, suspicion, and the probable knowledge by coworkers that there was a sexual component to the supervisor's initial attention. Carmen continued to experience sex-based harassment in the form of lactation discrimination that carried over to HR.

Nancy was forced to ask her male supervisors every day to unlock the room where she would pump that day, taking away her agency and exposing her to a mocking tone when they pretended they did not know why she needed the room. Nancy spoke

about sexual harassment as a problem among farmworkers in a global sense but did not identify herself as a victim of overt harassment. However, based on her statements she was surely a victim of another type of sex-based harassment, gender discrimination, defined as conduct that disparages people based on gender but implies no sexual interest.

The U.S. EEOC.gov (n.d.) website states that the law does not prohibit simple teasing or offhand comments or occasional incidents of a non-serious nature. Behavior becomes harassment when it is so frequent or severe that it creates a hostile work environment. For the study participants the gender-related harassment might not be daily or by the same person, but it happened often enough to create an uncomfortable situation. For example, two of the mothers were blatantly or obliquely referred to as cows for pumping, but since it was not daily or affecting their employment status, it was not harassment according to the EEOC definition. Nevertheless, the day in and day out micro-aggressions from a cast of characters add up to a hostile work environment. It is no wonder that other mothers decide the cost is too high to pump when both coworkers and supervisors of all genders contribute to the hostility. Any negative behavior related to a woman pumping is inherently related to her gender, therefore a form of sexual harassment.

Retaliation and powerlessness.

It was unclear if the participants thought the investigator would be able to intervene in their less-than-ideal situations when they agreed to speak with her. Tania and Gabriela, who had family support at work, seemed the least disappointed with their company management, although there were nuanced complaints. Martha did not have family nearby, but she received breastfeeding compassion from a coworker. The other

two participants, Carmen and Nancy, lacked any obvious interpersonal support at work, and could certainly have used some advocacy. Gabriela and Martha indicated that they never even spoke to HR about their perinatal situation at all, including their need for lactation space and time, but reading between the lines, they felt someone should have reached out to them.

Carmen was clearly the study participant who felt the most powerless. The investigator asked her if she wanted to speak to a professional colleague who had a relationship with HR staff at Carmen's company. Carmen declined, which was no surprise. There are so few women that pump in fieldwork, ostensibly a complaint could be traced back to her based on the timing. Most likely, she did not want to draw any more attention to herself (she is most likely undocumented, as are at least 70% of the fieldworkers in California (Kandel, 2008), and did not want any more interactions with HR whom she felt betrayed her:

I no longer want to do it. I no longer want to do it because I'm afraid to receive the same answer. Besides, if Human Resources is with this company [meaning on the same side], I'm going to get in trouble with my supervisor.

Carmen was also threatened with loss of wages when her supervisor told her, "You are taking too much time off [to pump]."

Although Carmen is the only participant who directly spoke about retaliation for asserting her lactation rights, it reminds the investigator of a mother she spoke to a few years ago. When the mom reported back to work after having her baby, she was greeted cordially and HR told her there was space available on her old crew. The employee told HR that she would need lactation accommodation, and HR then replied that they had made a mistake. There was no room on her old crew after all, and she was assigned to a

new crew. It would be difficult for her to see the transfer as anything other than retaliation for asking for accommodation. She felt powerless to protest further and did not want to complain to the labor commissioner.

While the study participants' milk expression experiences were almost exclusively negative in terms of company support, they understood what they accomplished would help move the industry along. Compared to ten years ago, when the investigator first started this journey, companies are recognizing the value of accommodating employees, and many are making proactive decisions. A challenge to management is dealing with employees in a male-predominant industry where there is discomfort with the idea of exposed breasts and the taboo of mentioning they exist. At least three of the five supervisors in the study, male and female, seemed to want to be supportive but did not know how to address the issue, as expressed by Martha about her male supervisor:

Ah, I haven't, I haven't spoken to him, but he has seen me and I'm sure he can imagine, but I say it again, perhaps I haven't gotten the courage to tell him and him also maybe for discretion he hasn't done it also.

Perhaps he is afraid of offending her or worse, being accused of impropriety if his words come across in a way that is offensive to her. Perhaps the next time an employee pumps, he will better understand her challenges since Martha already blazed a trail.

Structures, policies, and systems level.

The structures, policies, and systems level of SEMBA, first introduced in Chapter 2, includes the influence on workplace milk expression via family leave laws, labor codes, lactation laws, health care and insurance policy, and public health programs (e.g. WIC PC). All these types of laws and policies operate at the state and federal level so

there is great variation in support, leading to a piecemeal approach to achieving optimal breastfeeding outcomes.

California workers have lactation rights that far exceed most of the nation. Two federal bills, H.R. 3110 (PUMP for Nursing Mothers Act) and H.R. 1065 (Pregnant Workers Fairness Act) passed the House in 2021 but failed Senate approval until December 2022 when both acts were signed into law by President Biden as amendments to the omnibus budget package. The legislation levels the playing field for exempt employees needing lactation protection (United States Breastfeeding Committee, n.d.). At the time of this study, lactation in the workplace was not protected for farmworkers at the federal level, leaving migrant employees to maneuver a patchwork of state laws. For example, many California lettuce workers travel to Arizona to work during the winter months. In California, they had legal rights to accommodation, but Arizona had no workplace lactation laws. Now, farmworker lactation rights are protected in all states.

The study participants were interviewed before the 2020 enactment of the latest iteration of California lactation law that requires companies to advise employees of their access to lactation time and space. Although four of the women interviewed for the study were informed about the law from their PCs, it is now expected that employers will follow the law and inform their employees.

The study participants spoke of initially being empowered to pump because they were informed of the law. The category of trust in the law is a component of the theme of *Blazing the Trail*. The five study participants took a chance to exercise their lactation rights and in the process made it easier for others to follow, whether coworkers, family, or friends, and for the companies to have more experience in accommodating employees.

Societal systems and norms.

Critical race theory.

In Chapter 2, the investigator introduced elements of feminist theory, social support theory, and role-conflict theory to set the scene for the work-home lives experienced by the study participants. During the analysis of the interviews, it became apparent that critical race theory was also a framework that would help explain the women's challenges with milk expression in the workplace. The concept of critical race theory (CRT) has been accepted as a way to encourage critical thinking about the effects of racism throughout history and examines society and culture as they relate to categorizations of race, law, and power. Dunbar (2008, p. 86) suggests that the "sociocultural, political and economic position of the researcher and the researched plays an acute role in how research is presented and therefore interpreted."

In the investigator's case, she is a White Other describing study participants who are different from her in color, ethnicity, language, socioeconomic status, and nativity. The few things they share include gender, motherhood, a determination to make breastfeeding succeed despite barriers, and a desire to give their children the best in life they can. It is the investigator's interpretation and narrative, using the participants' words as a basis. While she can make an effort to be objective, her interactions and observations are inextricably linked to her Other background and experiences.

Discussion of power structure in the agricultural industry brings to mind the writings of Seth Holmes, a U.C. Berkeley professor and physician-anthropologist who lived and worked as a migrant farmworker with the Triqui, an Indigenous people of Mexico, with a significant population in Monterey County. He writes of the hierarchy of

farm labor, particularly in the berry fields. According to Holmes, (p. 81) in his book *Fresh Fruit, Broken Bodies* (2013), White people held the best jobs in agriculture, followed by U.S. Latinos, then mestizo Mexicans, and lastly Indigenous Mexicans and some Central Americans. The Triqui pickers, generally the bottom of the ladder of agricultural labor, reported more explicit racism from U.S. born Latinos in California, compared to the state of Washington. Both farmworkers and their managers, regardless of race, ethnicity, and documentation status, told Holmes (p. 84) that Triqui are more purely Indigenous because they are more likely to retain their primary language and are thus less civilized.

As reported in Chapter 4, Nancy spoke about Oaxacans breastfeeding in public and the associated stigma they experienced. Did she disclose that she is *Indio*? In the U.S., being Oaxacan implies Indigeneity; 65% of the state of Oaxaca is Indigenous, but 15% in Mexico overall. Women from Indigenous communities in Mexico face deeply imbedded discrimination at the hands of mainstream Mexicans. In a study among low-income Mexicans, Swigart et al. (2017) reported that breastfeeding is looked down on as something for poor, rural, and Indigenous women. Some study participants reported feeling as though they would be judged negatively for breastfeeding in public, reflected in part by a term for mothers that breastfeed in the street: *Marías* are the Indigenous women that carry their babies in their rebozo or shawl (Swigart et al., 2017). This stigmatization echoes Nancy's observation that Oaxacans freely breastfeed in public.

Nancy did not admit to speaking an Indigenous language, but then many Indigenous people speak only Spanish. She implied in conversation to me, however, that she is Indigenous, which could explain in part the reason she was unwilling to talk to HR

about her mistreatment in getting a decent place to pump. This adds another layer of reason for her timidity: probably undocumented; Indigenous and used to discrimination; woman; stigma of using her body to feed her child; low-wage earner; monolingual Spanish.

In Carmen's case, her company's HR staff were U.S. born Latinas, a detail the investigator can assume because of previous interactions with them for job-related meetings a few years back. Carmen did not identify to me as Indigenous, nor did she report speaking a language other than Spanish. Nevertheless, there clearly was a class divide within the company, if not a racial divide. Holmes (2013) writes that workers at every level experience stressors although the vulnerability varies according to position within the organization. The owners (White) and top managers worry about weather and market share; middle management worry about similar issues and are sensitive to their treatment by supervisors; pickers worry about picking enough to make money to live and working long hours to forestall fruit rotting on the vine. Breaks are determined by position, top to bottom. Especially when paid piece rate, field workers feel compelled to take infrequent breaks, lest they sacrifice productivity and pay that rewards team effort. Even still they might be criticized by coworkers for not working hard enough to make productivity goals or be reprimanded by their supervisor.

Researchers who address relationships in a hierarchical structure, such as with the agricultural company in question, necessarily begin by taking sides, often with the underdog (Charmaz, 2011, p. 445). This characterization is certainly true with this study. A general injustice, i.e. denial of adequate lactation space/time or opportunity to even consider workplace pumping, was reported to the investigator time and time again in her

role as a WIC breastfeeding coordinator and she felt helpless to promote change. Thus, began the start of her doctoral journey. The investigator is not an ethnographer who immersed herself into the day to day lives of farmworking women. Until this study she only captured a moment of time in the lives of hundreds, if not thousands of mothers, but not in any structured way that would allow inferences, theory, or anything other than a wealth of anecdotes. Even with this study, she only spent limited time with each case, but the difference is the more in-depth narrative of participant's experiences, analyzing every word and phrase for meaning.

How might women in the study have been treated differently if they were White? This is a hypothetical situation. In my experience working in public health for decades, and after reviewing demographic literature (USDOL, 2022), it is very unlikely to find a White hired fieldworker in Monterey County. Almost all (90-96%) field workers in California are Latino, with small percentages of other ethnicities to round it out. Supervisors in the vegetable and berry fields of Monterey County are Latino. Much of the HR staff are Latino. However, based on historic discrimination patterns, a White native-born fieldworker would certainly not worry about threats of deportation, would be able to read important legal and safety information printed in English, and would be more likely to complain to someone if she was denied accommodation or sexually coerced.

A local example of the hierarchy based on nativity/immigrant status and job type came into focus when a WIC participant called the investigator (in her role as a WIC employee) to complain about the substandard lactation space at a produce processing plant. WIC staff had heard about the situation from other mothers, but none wanted to file a complaint with the labor commissioner or call company headquarters. The complainant

was Latina, born and raised in Monterey County, thus a citizen, and spoke fluent English. It is likely that she was not afraid her complaint would lead to a negative action and knew she could not be deported. The investigator learned from a contact in the company that the plant was managed by a contractor who, for reasons unknown, chose not to upgrade the room to meet legal standards. When company management learned about the situation from the investigator, a beautiful new lactation space was installed within the week. The investigator understands her position and connections in the community helped expedite the transformation; she looks forward to the day when access to suitable lactation space is the norm in all workplaces.

As previously mentioned, Indigenous farmworkers are even more at risk for exploitation than the study participants. Although two women insinuated Indigenous heritage (Martha through her mention of her Nahuatl language skills and Nancy by her empathy for discrimination faced by Oaxacans for breastfeeding in the public sphere), all spoke fluent Spanish and appeared to the investigator to be at ease in mainstream Mexican culture. Of Mexican farmworkers in California, 30% or more are Indigenous and the percentage is even higher in certain counties, including Monterey. Indigenous women, situated on the bottom rung of the hierarchy described by Seth Holmes (2013), may be even less likely to request lactation accommodation or complain about mistreatment, due to their cultural role. Their lack of formal education and non-fluency in Spanish, compared to their male counterparts, might also contribute to a reluctance to ask for accommodation. A higher percentage of Indigenous versus Mestizo farmworkers are undocumented. With all the additional layers of complexity they present, the investigator purposefully excluded monolingual Indigenous language speakers from the study. There

are likely other cultural factors involved that might have prevented Indigenous women from participating, compared to non-Indigenous women.

Feminist theory.

Breastfeeding is a biocultural practice that is biological in function but requires significant cultural support (Hausman, 2004). In the U.S., breastfeeding (or pumping) does not usually indicate exposure of breasts in public, but the lack of depiction in breastfeeding education/promotion perpetuates “an ongoing prudery about female bodies.” This is in stark contrast to the manner breasts are often portrayed in contemporary media and advertising. Americans are reluctant to accept the handling and exposing of breasts that is necessary to feed a child or pump milk. A 2021 CDC survey indicates that only 69% of respondents agreed that women should have the right to breastfeed in public spaces. The number in agreement has improved since 2010, when only 58% agreed. It should be noted that all states have laws that allow for breastfeeding in public. Some states had to define it as non-obscene practice to quash the widespread notion that exposed breasts are always sexual.

All mothers suffer the consequences of our national squeamishness toward breastfeeding, but Hausman (2004) notes that women with less social power (ethnic minorities and low-wage earners, such as immigrant farmworkers) may be more careful about exposing their female bodies in public spaces. In the case of the women in my study, breast pump usage allows them to continue breastfeeding “as an embodied practice of mothering in the context of waged labor (Hausman, 2007, p. 492). The pump allows the mother to remain attached physiologically (if not anatomically) to their children, in a

manner of speaking, but that attachment is bittersweet, as their physical separation is more often than not from dawn to dusk during harvest season.

Looking through the lens of U.S. culture, breastfeeding reveals incongruous perceptions of mothers. A good mother, a self-sacrificing mother (marianista) breastfeeds her baby to provide the best of nourishment, but a working woman, cast into a mixed gender worksite, finds her life-giving breasts disembodied and an object of discomfort (Carmen), derision, and “morbid curiosity” (Tania).

Challenges to combining breastfeeding with paid labor are found at all socioeconomic levels, but especially at the intersectionality of race and class. The term of intersectionality, first coined in the 1980s by Kimberlé Crenshaw, referred to the way in which multiple forms of oppression, based on gender, race, class, and ethnicity overlap and put immigrant women of color most at risk of violence from both the state and individuals (Runyon, 2018). Other social determinants, including U.S. residency status, pregnancy/lactation discrimination, and power differential in employment contribute to the inequalities encountered by farmworking women. For this discussion, the investigator chose only to introduce intersectional theory as a potential framework for future research, since the experiences of the study population align with the theory constructs.

Implications for Nursing and Health Innovations

Policy.

Enforcement of existing workplace lactation policy is an obvious first step to support women struggling to combine employment and breastfeeding in California. Regulations designed to protect the right to milk expression on the job have been on the books for years and were recently updated (after the study interviews took place) to

include a lactation policy mandate for companies, including information on how to file a complaint for non-compliance by the employer. Although agriculture was not explicitly stated in the California labor code until legislation was enacted in 2019, the industry was never excluded (CDPH, 2021). Once agricultural company HR departments realized that they were expected to provide lactation space and time to their employees, interest in abiding by the law increased. At least, this was the observation of the investigator in her role as a county breastfeeding coordinator, after receiving several inquiries about accommodation around the time new workplace laws were passed.

Prior to the legislation enacted in 2020, study participants had knowledge of their lactation rights due to the support of the PCs. However, in most cases, their coworkers and even supervisors were not aware of the workplace lactation law or did not understand the specifics of the legislation. Employers are responsible for following labor laws and must shape the work environment accordingly but the trickle down from company executive to HR to supervisor to foreman often resulted in poor support for lactation, based on the findings of the study. Company HRs should also make sure that parents going out on leave understand their own rights; a Spanish language infographic on workplace lactation or link to a video might be more user-friendly. Giving a written policy to someone who might have literacy challenges (e.g. first language is Indigenous, no formal education) is the same as denial of access.

Lactation support cannot be discussed apart from the systemic sexual harassment problem in mixed gender worksites, including agriculture. California has led the nation in mandated sexual harassment training for private-sector as well as governmental employers. However, there appears to be a disconnect that has recently been identified in

the literature and legal arena (e.g. Berdahl, 2007): derogating, demeaning, humiliating, and retaliating against a lactating employee is gender harassment, the most common form of sexual harassment, and is against the law.

In the investigator's experience as a breastfeeding advocate for low-income women, as a supervisor, and as the breastfeeding coordinator for a large organization, she observed that many workers do not understand the lactation rights mandated by legislation and policy. She developed a training module required for all organizational employees, irrespective of their job duties or even if they had female coworkers. This requirement was a hard-fought victory, owed to the work and passion of representatives from several departments who understood the importance of coworker knowledge and support for breastfeeding workers. There was expected pushback from employees who resented an extra training course (albeit 15 minutes long) and/or felt that because they were not new parents or breastfeeding, they did not need the information.

A lawsuit filed in 2018 against the Navy illustrates the necessity of training all employees. Management at a U.S. Marine base was sued for tolerating lactation discrimination and gender harassment against a mother who was denied a clean, private place to pump milk for her baby, while enduring crude remarks. The Navy settled with the plaintiff for monetary damages and agreed to conduct sexual harassment training for all managers at the location, including instruction that lactation harassment is sexual harassment (Legal Aid at Work, 2021). California requires companies to develop a lactation policy, include it in the employee handbook, and share it with new employees and employees inquiring about or going out on parental leave. However, a policy is useless if the coworkers of the lactating employees are not aware of their rights. The

Navy settlement recognizes that supervisors must be trained, but it does not go far enough. As evidenced by the results of this study of agricultural workers, much of the lactation harassment is perpetrated by coworkers under the nose of and perhaps with tacit approval of management. Training on lactation rights must be directed at all levels of the organization.

An easy and relatively inexpensive route to educating California employees on the rights of lactating workers is simply to require that all sexual harassment trainings include a section on lactation accommodation. Only eight states require sexual harassment training; in California, training is required every two years (NCSL, 2021). The California Civil Rights Department (CACRD) provides free online courses on workplace sexual harassment prevention that satisfy training requirements pursuant to Government Code section 12950.1. This law requires all employers of five or more employees to train both supervisory and nonsupervisory employees on sexual harassment and abusive conduct prevention. The law requires the training to include practical examples of harassment based on gender identity and expression, and sexual orientation (CACRD, 2022). The investigator proposes that additional content be added to the existing training to address lactation discrimination/harassment. For organizations who wish to have a more robust and detailed training, as in the case of the investigator's employer, a stand-alone lactation training with information specific to their lactation policy can be developed.

Only Nancy specifically mentioned a desire for a longer parental leave, but there is much evidence that a longer paid leave is associated with longer duration of breastfeeding (Huang & Yang, 2015; Mirkovic, Perrine, & Scanlon, 2016; USDHHS,

2011). The study did not include the question as to whether a longer leave would have better supported their lactation goals. In her practice, the investigator has observed that once milk supply is regulated and the baby starts solids at 6 months of age, some mothers need less frequent pumping sessions to remove the milk needed. At the same time, the baby may nurse longer or more often once the mother arrives home from work, resulting in adequate breast milk intake without as many pumping sessions.

Paid parental leave is associated with improved breastfeeding outcomes as demonstrated when California became the first U.S. state to enact paid family leave in 2002 (Huang & Yang, 2015). However, the paid time off is only 60-70% of usual earnings (CEDD, 2022) and might not be enough to incentivize families to extend their leave for the full 14 weeks allowed post-delivery from medical disability and baby bonding time. Women employed in a manual labor job are more likely to return to work within three months after delivery compared to women in professional occupations and are more likely to work full time. New mothers who return to work within three months of giving birth tend to breastfeed for a shorter duration (Lubold, 2016).

Education and practice.

Expansion of peer support.

Peer support works, as evidenced by previous studies (Chapman & Pérez-Escamilla, 2012). The participants of this study all attributed their decision to express milk at work and continue, in part due to the support of their PC. Expanding access to PCs for all women working in agriculture or other challenging worksites (e.g. fast food) will empower more mothers to request accommodation. Currently at WIC, the PCs recruit participants for their services by outreach at classes or referrals from other WIC

employees. Potentially more farmworkers could be enrolled in the program via social media, outreach at the local clinics, or by providing agricultural employers with an infographic to be included in their parental leave paperwork. However, there is a limit to how many clients the USDA-funded program can serve.

The WIC PC program has demonstrated its success at improving breastfeeding outcomes, but PCs serve employees from many different companies over a large geographical region. A peer support person within the same company, who has already navigated the workplace lactation gauntlet, might provide the emotional, affirmative, and informational support a new mother needs when returning to work. This plan would require support from the company but would yield dividends of employee satisfaction and loyalty and lower the risk of lactation discrimination. Training might be provided through WIC funding or special grant funding.

Training for primary care providers.

The influence of the participants' health care providers (mom and baby) was on average neutral and provided appraisal rather than informational or instrumental support. In her role as a local WIC agency breastfeeding coordinator, the investigator conducted training with local hospital residents on lactation accommodation for agricultural workers, but there are currently no regularly scheduled trainings on the topic. Feedback indicates that the physicians want the information to help their patients, so WIC should partner with local organizations to provide updates.

Direction of future research.

Many workplace lactation studies describe the challenges facing employees, but do not necessarily ask why, when and where lactation access is a problem and how

supervisors and employees can provide support (Thomas et al., 2021). The authors, writing in a human resource management journal, specifically mention fieldwork, mirroring the investigator's position that evidence is lacking for manual labor and outdoor worksites. Although research on workplace lactation across a variety of disciplines has increased in the last decade, there remains limited research from the perspective of employers (managers, HR departments, and supervisors) and coworkers.

Lactation research in the management and organizational behavior literature is increasing and contributing to the understanding of the work-family experience of breastfeeding women. Study findings indicate that since most challenges/stressors to lactation accommodation emanate from the interpersonal (coworker) and work environment domains, a theoretical framing of work-family conflict would make sense. Over the last few decades organizational and management scholars have theorized that work and family domains can interfere with or enhance one another (Gabriel et al., 2020).

There is no known research on lactation knowledge and attitudes among agricultural employers, even though California and other states with significant fruit, vegetable, and horticultural production have a high proportion of female workers. A validated workplace lactation support survey should be administered anonymously through industry organizations to assess policies, programs, and practices. Supervisors, management, HR, and safety officers should participate. From the investigator's work experience and through this study, she understands there is a disconnect from top to bottom of the corporate hierarchy. A different validated survey should also be administered to the front-line field and processing plant workers themselves to determine if the required policies are in fact reaching their intended

audience. This survey would be more challenging because it would require a community recruitment, possibly at a festival or health fair, such as the sexual harassment survey conducted by Waugh (2010).

Limitations

Limitations of a study can influence the interpretation of its findings and constrain transferability and application to practice (Bloomberg & Volpe, 2016). Although care was taken to design methods to avoid bias, there are limitations that may have influenced the results. One limitation of the study was the limited scope of where sample recruitment took place, via the WIC Program office and a community clinic serving farmworkers. The locations were designated to maximize exposure to breastfeeding farmworkers but ultimately all five women recruited to the study were WIC participants who also received WIC peer counselor (PC) services.

It was not intentional that the entire sample be PC clients, but the investigator believes the PC support tipped the scales favorably toward participants initiating and sustaining their milk expression at work. The well-trained and passionate breastfeeding PCs provided social support and the resources of the WIC Program including: instrumental support such as a rechargeable battery-powered pump, nursing cover, milk storage bags, pop-up privacy tent; informational support, e.g. handouts on pumping and California lactation law; emotional support, based on the trust formed by regular phone check-ins and through in-person counseling sessions; and appraisal support in the form of constructive feedback. Every WIC participant has potential access to these resources, but not every WIC employee is specifically tasked with breastfeeding peer support.

Another issue that might be considered a limitation was the investigator's concurrent employment at the WIC office, the source of all the referrals for the study. When designing the study, the investigator considered the ethical implications that might arise from her dual role as supervisor of the PCs and as a student researcher. The PCs understood that she could not interact with the participants in the office while she wore her supervisor's hat, especially because it was important that the study recruits did not feel they had to engage with the investigator to receive WIC benefits. It was equally important that the PCs did not feel coerced to find breastfeeding mothers for the study. The caution taken is illustrated by the fact that it took so long (18 months) to find the five research participants. The PCs understood the purpose of the study, and that their work and dedication was an inspiration for the investigator's journey. They look forward to the published results that will ultimately help inform breastfeeding advocates who work with mothers employed in low-wage and outdoor jobs. However, it bears consideration to think how recruitment might have gone without the advantage of the WIC connection.

A third limitation of the study was the failure to pilot the interview questions with the participants' peers, that is, breastfeeding Mexican immigrants with agricultural work experience. The questions were formulated based on each level of the SEMBA framework and reviewed by committee members and the cultural aide for the initial study proposal. However, it became apparent after the second interview that some questions did not make sense without further explanation. The interview process was new for both investigator and aide, and there was confusion about some questions during interviews with and without the aide. The questions should have been tested and then reframed in a way that invited deeper discussion of how the participants made their pumping decisions.

In a related issue, the investigator wonders if the participants would have shared more or less about their experiences if the cultural aide was present at all the interviews. As previously mentioned, the aide attended the first session, but scheduling conflicts prevented her from attending subsequent interviews. On one hand, participants might have shared more personal insights in the presence of the Mexican American aide, but conversely, having a second person at the interview may have constrained the process. Would participants be more likely to engage with an Other investigator alone, who is unlikely to know much about her neighborhood, who would not have the same cultural expectations of her as a Latina mother, and who might be in a position to help their pumping situation?

The investigator realized an additional limitation with the study format after transcribing and coding the interviews. She discovered many lost opportunities for follow-up questions, and at times asked too many questions in a row without giving participants a chance to fully answer. For example, Carmen mentioned that she was pumping in the company pick-up but after her frustrating experience with her supervisor and HR, she stopped pumping. Did she stop pumping only at breaks or at lunch as well or did she completely stop pumping at work? Gabriela mentioned that people were more pro-breastfeeding in Mexican towns versus the big city. Why did she think that? The investigator will never have the answers to these and many more questions that could enrich the findings of this study.

Part of the overall problem with follow-up questions was due to the investigator interviewing in a non-native language, as well as to her overall discomfort in conducting the interviews. The anxiety factor could have been reduced by interviewing coworkers or

other acquaintances with demographics similar to the sample population. The investigator became more comfortable with successive interviews and was able to ask more probing questions by the fourth and fifth interviews (Nancy and Gabriela). Fortunately, since the interviews were recorded and transcribed, she was able to review the transcripts for some clarification. Additional interviews were not part of the study protocol but likely would have produced additional insight and greatly enriched the findings. Second interviews might also have led to a more relaxed atmosphere of conversation and personalismo, where participants could share their experiences on a deeper and richer level.

Changes in contextual factors since study completion.

Since the study was completed, at least two major changes affecting the climate of farmworker lactation accommodation have occurred. Coincidentally, both changes happened at about the same time so the individual effect of either occurrence is difficult to ascertain. The first change was the enactment of California SB 142 in January 2020 mandating employers develop and implement a lactation accommodation policy. The previous year the legislature specifically mentioned the need for agricultural employers to accommodate their employees for milk expression (CDPH, 2021). The investigator, in her role as a county breastfeeding coordinator, participated in an agricultural industry labor committee and regularly contacted agricultural employers to encourage them to accommodate employees, offering the support of WIC resources. After the labor code was modified, companies became much more responsive to speaking with her about complying with the law.

In March of 2020, COVID-19 hit the agricultural community with a vengeance. Due to sky-high housing costs in the area, the investigator has personally observed that

many farmworker families double and triple cohabit homes. For example, three families might share a three-bedroom home, thereby increasing the likelihood that any communicable disease will be easily transmitted.

The WIC Program and the associated PC program came to an abrupt halt in terms of in-person counseling and support. Fortunately, telephone and video calls were able to fill the gap of support, but anecdotal evidence suggests that due to fear of COVID-19 transmission, many women who had planned to breastfeed pivoted to formula feeding. The agricultural companies experienced a further decrease in the labor pool, and the PCs shared that many mothers decided to take the season off from working. There was a significant decline in the number of breastfeeding mothers requesting battery-powered pumps for work. Concurrently, local WIC statistics reflected a decrease in the number of exclusively breastfeeding dyads while the number of babies receiving both breast milk and formula increased. The investigator participated in several webinars related to COVID-19 and breastfeeding for the spring 2020 to 2022 period, but none discussed the impact on workplace lactation.

Since all the investigator's interviews took place pre-COVID-19, it is a challenge to understand how things will change with the new normal. Conversations with HR representatives from agricultural companies employing hundreds of employees indicate that even with new accommodations and better communication, mothers going out or returning from parental leave are not requesting lactation accommodation. Is it distrust of what is being offered and/or do they want to keep their private business, private? In the two years after COVID-19 first arrived on the scene, the PCs no longer spoke with clients or taught breastfeeding classes in person. This lack of face-to-face personalismo could be

a reason women who did return to work were less inclined to ask for accommodation, since 60-70% of pregnant women in the county receive WIC services.

Dissemination

Dissemination is a way to raise awareness of an issue when there is limited information available for either the study population or practitioners. The findings of this research project will be disseminated in a way that builds capacity to support and empower breastfeeding farmworkers at multiple levels, thus strengthening trustworthiness (Miles et al., 2014). As the primary beneficiaries of this study, farmworkers deserve information presented in a manner that is engaging, culturally relevant, and addresses their concerns about pumping breast milk in the workplace. The investigator, in her role as the Monterey County breastfeeding coordinator, collaborated with other local breastfeeding advocates to launch a website, 831Breastfeeds. The website provides information on breastfeeding and other lactation issues to families, employers, and providers in the California telephone area code 831. Included on the site is a webpage that specifically addresses the issues of agricultural workers, available for review in Spanish.

Although the main beneficiaries or end users of this study are families, organizations like clinics that serve low-income working women can use the findings for the improvement of clientele health and the community at large (Minkler & Wallerstein, 2008). Practitioners in the disciplines of public health nursing and nutrition, medicine, social work, human resource management, and labor relations are interested in the findings as they relate to planning, policy development, or practice within their organizations. The investigator plans to share findings with local organizations serving

farmworking families, including group presentations or newsletter articles to Monterey County Maternal, Child, and Adolescent Advisory Council, Santa Clara County Breastfeeding Task Force, Monterey County WIC Program, Monterey County Comprehensive Perinatal Services program, Central California Alliance for Health (local Medicaid managed care program), Nursing Mothers Counsel of Santa Cruz County, Natividad Medical Center family practice residency program, Clinica de Salud del Valle de Salinas providers, California Department of Public Health Regional Breastfeeding Liaisons and other departmental breastfeeding staff. Findings will also be shared with agricultural employers, including labor contractors and grower-shippers of fruits and/or vegetables. In addition, the investigator will seek out the usual avenues for reporting qualitative research findings, for example, peer-reviewed journals and posters or other presentations at professional conferences.

Summary

A qualitative case study design, guided by SEMBA as a theoretical framework, was used to explore the enablers and challenges of milk expression faced by Mexican immigrant mothers in the U.S. agricultural workplace. Multiple methods of data collection were employed by the investigator, including individual semi-structured interviews and sociodemographic questionnaires. Content analysis, in the form of in vivo and process coding, began with an immersion in the data, while data collection was taking place, as both processes influenced each other. Coding was based on an initial coding manual developed from SEMBA levels of influence, as well as from codes that emerged inductively. Data were subsequently condensed into fewer, more meaningful categories and themes, and displayed in a matrix (Appendix I) to facilitate the

identification of patterns and relationships and to generate propositions about the phenomenon of interest. After each within-case analysis was completed, a replication strategy was used to compare cases.

Enabling factors for milk expression in the workplace were found at all levels of SEMBA, except for the work environment level. At the individual level, self-efficacy, strengthened by social support (interpersonal), was a major contributor to continuance of milk expression despite significant challenges at the interpersonal (coworker) and work environment levels, represented by the theme of *Running the Gauntlet*. Social support at the interpersonal level was provided by family members, child care providers, and WIC peer counselors and buffered the hardships of the workplace. Community level enablers included cultural values, personified by the theme of *Honoring Culture*. Trusting in the (lactation) law at the systems level was mentioned by study participants as an enabler of workplace milk expression within the theme of *Blazing the Trail*. Study findings will be disseminated to multiple audiences, including agencies that directly serve farmworking women and policy-makers at the local, state, and corporate levels.

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APPENDIX A
METHODOLOGICAL APPENDIX

My Journey to Dissertation

My journey to dissertation began with two crying mothers in my office...and I was one of them.

About 10 years ago, a woman I'll call Norma burst into tears as she sat on the big stuffed breastfeeding chair in my Salinas, California WIC office. She wasn't the first mother to become emotional when the conversation turned to options for maintaining breastfeeding while working in the fields. The agricultural industry is the economic engine of Central California's economy and employs 40% of the mothers enrolled in the Monterey County WIC Program. To Norma's thinking, along with the tens of thousands of other farmworking mothers across the country, there were only two infant feeding options after her cuarentena ended: continue breastfeeding and delay going back to work until the following year; or switch over to formula feeding her infant so she could work the current season.

The first option wasn't very realistic for Norma or many of her peers with families who are dependent on mothers' wages to survive. Along with my coworkers, mostly from agricultural backgrounds as well, I shared Norma's assumption that switching to formula was the only realistic infant feeding solution for someone working ten-hour days in the heat, dirt, and wind. Yet, after a tearful Norma left the WIC office with her formula checks and a manual pump, I mused out loud to my breastfeeding peer counselors something to the effect of, "If we can put a man on the moon, why can't we figure out how to help these moms pump at work?"

California passed a workplace lactation accommodation law in 2002, but I knew of no effort to promote or enforce it for farmworkers. At about the same time as my

encounter with Norma, a new breast pump company came out with a lithium battery-powered pump that could be charged at night and have enough power for 5 hours of pumping the next day. We ordered a few of the pumps to try out with interested field workers, developed a breastfeeding class specific for working moms in low-wage jobs, and shifted our peer counseling focus and resources to farmworkers. I also asked my husband, who works in the agricultural industry, what he thought about me asking ag companies to support their breastfeeding workers. His response was a question: did I even know whether farmworking mothers would take advantage of lactation accommodation if offered to them. He encouraged me to get some hard facts (data!) and successes behind me before approaching companies.

Taking my husband's comments to heart, I designed a survey to assess the workplace lactation attitudes and practices of virtually all postpartum women receiving services from our WIC agency. We ultimately received data from 3708 individuals over the course of a year. I discovered that women who worked in agriculture were less likely to have a positive attitude toward the idea of pumping in the workplace and more likely to use formula than the WIC participants who did not work in agriculture, even when comparing women with similar demographics. But most of all, I learned that despite possession of this incredible amount of rich raw data, I did not have a clue of what to do with it aside from descriptive statistics! Hence my dissertation journey was launched and continues to sail through choppy waters with women of the farmworker sisterhood.

Based on my work experience and knowledge gained through the survey and doctoral research, I assume that a significant number of farmworkers would like to combine breastfeeding with employment but are unable to meet their goals, while other

women with are successful under similar circumstances.

Personal and Theoretical Assumptions

Since I am conducting qualitative research, and therefore I am an instrument of my study, it is incumbent that I lay bare my assumptions and biases:

- Breastfeeding is the biologically normal way to feed a baby, but there are mitigating factors
- Notwithstanding significant physiological, emotional, or psychological deterrents, women should try to breastfeed as much as possible and should be supported at every level of SEMBA
- *Los dos* reduces the benefits of exclusive breastfeeding and should be minimized
- WIC spends too much money on formula and not enough on breastfeeding support! (There, I said it!)
- If given the opportunity and support of their employer, women should try to breastfeed/pump at work to maintain their milk supply
- If it is their wish, women should be supported to express their milk at work, no matter the setting

APPENDIX B
STUDY FLYER



Buscamos a las trabajadoras agrícolas que amamantan

- ¿Alguna vez ha tratado de sacar su leche materna al estar trabajando en el campo?
- Por favor comparta su experiencia para que podamos aprender cómo las trabajadoras agrícolas continúan amamantando después de regresar al trabajo.
- Usted recibirá una tarjeta de regalo de \$20 para agradecerle por su tiempo.
- Llame a Janet Vaughan al **(831) 594-██████** o email al jcvaugha@asu.edu
- Janet es una especialista en lactancia y asiste a la universidad para obtener su doctorado.
- Su información permanece confidencial.

We are looking for breastfeeding farmworkers

- Have you ever tried to pump your breast milk while working in the field?
- Please share your experience so we can learn how farmworkers continue breastfeeding after they return to work. **You will receive a \$20 gift card to thank you for your time.**
- Call Janet Vaughan at **(831) 594-██████** or email her at jcvaugha@asu.edu
- Janet is a breastfeeding specialist and is attending school for her PhD
- Your information stays confidential

APPENDIX C
INFORMED CONSENT FORM

Informed Consent

Title of project: Milk expression in the agricultural workplace

Project manager: Janet Copeland Vaughan. I am a student in the College of Nursing and Health Innovation at Arizona State University.

Why am I being asked to participate in this project? Farmworkers are more likely to give up on breastfeeding than women who work in other jobs. We want to find out what helps or prevents farmworker mothers in pumping their milk at work.

Why is this project being done? Moms and babies that breastfeed have fewer health problems. If mothers can pump their milk at work, this may help farmworkers and other Mexican immigrant families be healthier.

How many people are in the project? About 3 to 10 farmworker mothers will talk to us about their breastfeeding experiences.

How long will the project last? The first meeting will take about 1½ - 2 hours. You may be asked to meet again for about 30 minutes if more information is needed.

What happens if I join the project? If you agree to talk to us, we will meet in Salinas at a place where you are comfortable. For example, we can meet at your home or the library or another quiet place. First, you will fill out this form and then answer questions about yourself, your family, and breastfeeding. Then we will talk to you about what it is like to pump your milk at work and how different people and situations affect your breastfeeding. We will also ask what helps you to continue breastfeeding. Your answers will be audiorecorded, but we will not videotape you. If you agree to another interview later, we will meet at a place you choose.

What happens if I agree to the project, but then change my mind? You can change your mind at any time. You have the right not to answer any question. You can ask at any time that the information you gave us not be included in the project. Your health care or public benefits will not be affected if you decide to quit the project.

Will I have to pay for anything? There is no cost for you to help with this project. You just show up to the meeting place at the time and date we agree on. You will receive a \$20 gift card to thank you for your time.

Is there a chance the project could harm me? There is little chance of harm for participating in the project. Some women might not like to talk about breastfeeding or pumping at work. If you feel uncomfortable for any reason because of the project, please contact Janet.

Will the project benefit me? The project will help us learn what helps moms to pump at work. Babies who receive more breast milk and mothers who breastfeed longer tend to be healthier. We are trying to find out how families, clinics, employers, and government programs can help mothers breastfeed more. Sharing your experience may be helpful to you or other mothers who try to breastfeed and work.

Who will see my project information? Every effort will be made to keep your information private, but we can't guarantee it. We will give you a false name to help protect your identity. Your real name will be only on this consent form and a master list with your false name. The consent form and master list will be locked up separately from other information about you. During the project and after it is complete, our meeting notes (transcripts) and other information will be locked in my file cabinet. Project information will also be kept in a secure computer file.

Another person will use the audiotapes to write down everything we say during our meeting. They will sign a privacy pledge not to discuss what they hear. A different person will translate our interview from Spanish to English and will also sign a privacy pledge. Only they, my school advisor, and I will be able to see their notes. Only my advisor and I will be able to see the consent form and the questionnaire.

We might talk about the information you share with us at meetings with other professional people interested in breastfeeding or publish the results in academic magazines. Your personal information will be kept private and your real name will not be used. Project information will be saved for 7 years and may be used for future projects by Janet Vaughan or other professionals who are interested in breastfeeding among working women. Audiotapes will be destroyed after the project is completed. Our copy of the consent forms will be destroyed in 7 years.

Who do I contact if I have questions? The student working on this project is Janet Copeland Vaughan and her advisor is Elizabeth Reifsnider. You may ask Janet any question you have now. If at any time during the time of the project or afterward you have a question, concern, or complaint, you may reach Janet by email at jcvaugha@asu.edu or phone at 831-594-0287. Her advisor is Dr. Reifsnider at Elizabeth.Reifsnider@asu.edu or phone at (602) 496-1394.

This project has been reviewed and approved by the Bioscience Institutional Review Board at Arizona State University. It is your right to speak with them if your questions or concerns are not answered by the student, or if you wish to talk to someone besides her. Their phone number is 480-965-6788 and their email is research.integrity@asu.edu.

Agreement to be in this project

I have read this information about the project or it was read to me. I understand the possible risks and benefits of this project and that my participation is voluntary. I choose to be in this project and understand I will receive a copy of this consent form.

Signature _____ **Date:** _____

Print name: _____

Signature of person obtaining consent:

_____ **Date:** _____

Printed name of person obtaining consent: _____

APPENDIX D
SOCIODEMOGRAPHIC QUESTIONNAIRE

Breastfeeding Questionnaire

(to be completed by researcher)

Pseudonym: _____

Today's Date: _____

- 1) Your date of birth: _____
- 2) Number of total years lived in United States: _____
- 3) Highest year of school completed: _____ U.S. or _____ Mexico
- 4) Language questions*

	Only Spanish	Spanish better than English	Both equally	English better than Spanish	Only English
In general, what languages(s) do you read and speak?	1	2	3	4	5
What language(s) do you usually speak at home?	1	2	3	4	5
In which languages(s) do you usually think?	1	2	3	4	5
What language(s) do you usually speak with your friends?	1	2	3	4	5

- 5) Do you speak a language other than English or Spanish? yes no
If yes, which one? _____
- 6) Relationship status: married/living together unmarried/single
- 7) Number of children born: Born in U.S. _____ Born in Mexico _____
- 8) Date of birth of youngest living child: _____
- 9) Longest time breastfeeding a child: _____
- 10) How old was last baby when s/he first received formula? _____
- 11) If baby received formula, why? _____
- 12) Did you receive WIC after youngest baby was born? yes no
If yes, did you receive formula from WIC? yes no
How many cans per month? _____
If yes, did you receive breastfeeding help from WIC? yes no
Did you have a peer counselor? _____
- 13) Did you receive paid leave (disability, vacation) after last birth? yes no
- 14) How old was baby when you went back to work? _____

*From Marin, Sabogal, & Perez-Stable (1987)

- 15) Did you ever pump or express your milk? yes no
 If yes, why?
 latch problems to increase milk supply hospitalized baby
 work/school medication/illness of mother
 other breastfeeding issue _____
- 16) Did you ever pump or express your breast milk while at work? yes no
 Type of job/crop, e.g. picking, pruning _____
 Company (optional) _____
- 17) Did you ask Human Resources or your supervisor for permission or help to find a place to pump?
 yes no
- 18) Where do(did) you pump at work? _____
- 19) How much time do(did) are you given to pump? _____
- 20) How long did you pump (days, weeks, months, still pumping)? _____
- 21) If you pumped at work, where did you get the pump you used?
 WIC health insurance other _____
- 22) If you pumped at work, what type of pump did you use?
 manual electric, plugged into car battery-charged electric
 other pump _____ hand expression

APPENDIX E
INTERVIEW GUIDE

Semi-structured Interview Guide

Thank you for sharing your feelings and opinions about pumping your breasts while at work in the fields.

We will never use your real name during our project. You will be given a false name, so someone reading the transcript will not know who is speaking. If you mention other people in our discussion, please use a false name for them as well. I would like to record you using this digital recorder and take a few notes as we talk. Is that all right with you? We can stop anytime you are uncomfortable, would like to ask questions, or want to end the interview.

We will talk for about an hour, but if you would still like to tell me more about your experience, then we can talk longer. Is it OK to start now?

You were asked to tell us about your experience because you work in agriculture and are pumping your milk at work now, or did in the past.

I have some questions for you based on different factors that might have affected your pumping success, either in a positive or negative way. There are no right or wrong answers, but your answers may help improve the pumping experience of other farmworking women in the future.

1. How did you decide to continue breastfeeding after you returned to work?
2. How did you decide to pump your milk at work?
Probe: What feelings about yourself or your baby helped you make the decision to pump? Helped you to keep it up once you started back to work?
3. How did (does) your family, friends, or other confidants react to your decision to pump at work? How did (do) they support you?
4. How do you think your Mexican culture, particularly among farmworkers here in California, affected your decision to breastfeed after returning to work? Decision to pump at work? To continue pumping?
5. How did (does) people and programs in the community affect your decision to pump at work and whether to continue?
Probe: Media (TV, radio, magazines, internet)
Probe: WIC
Probe: Clinic
Probe: Childcare provider

6. How did (does) your workplace and type of job affect your decision to continue breastfeeding after returning to work?
Probe: Affect decision to pump at work?
Probe: the people at work; company rules/policies; the actual field setting: the weather; the type of crop; the type of labor; the length of work day.
7. How did (does) laws or government policies affect your decision to continue breastfeeding after returning to work? Affect your decision to pump at work? To continue pumping?
Probe: paid leave (disability); workplace lactation laws; health insurance; sexual harassment laws; other labor laws, etc.
8. What do you think we should do to improve the chance that farmworking mothers can breastfeed more and for a longer time after they return to work?

APPENDIX F
CONTACT SUMMARY FORM

Contact Summary Form

Pseudonym _____ Date _____

1. What were the main enablers/challenges or themes that came out in the interview?

2. Summarize the information I heard (or did not hear) on each of the interview questions.

How did you decide to pump?

Feelings about baby/self

Family/friends

Culture

Media

WIC/staff/food package/BF help

Doctor/clinic

Childcare

Workplace/company/weather/crop

Laws/policies/insurance

Improvement suggestions

3. What came across as salient, interesting, surprising, or important?

4. What new or remaining questions do I have for this participant?

Adapted from: Miles & Huberman (1994)

APPENDIX G
INITIAL CODING MANUAL

Initial Coding Manual *(Based on levels of SEMBA)*

1	Individual (Mother-Child Dyad) (mother's knowledge, attitudes, beliefs, and dyad's biological characteristics that enable or challenge milk expression at work)
1A	Enjoying good health and abundance of milk: Perceiving maternal body as able to produce adequate nutritious milk while working a demanding, manual labor job
1B	Feeling close to baby: Providing something to baby that no one else can; feeling connected to baby even while at work
1C	Enjoying extended experience of breastfeeding: Enjoying a longer BF ¹ experience and better milk supply by pumping at work and giving milk to baby's daycare provider
1D	Having a healthy baby: Perceiving her baby as happy and growing well on her milk
1E	Feeling prepared to pump at work: Feeling there is enough time and support to establish an adequate milk supply and store milk before returning to work
1F	Feeling confident: Believing that she has the competency (self-efficacy) and resources to be successful in pumping milk at work
1G	Feeling comfortable vs. vulnerable: Feeling secure and free from harm physically, mentally, socially, emotionally, and financially in requesting and following through on workplace lactation accommodation
1H	Wanting more for baby: Wanting baby to have better start in life with BF, and protect her from harsh realities of poverty
1I	Having prior BF experience: Understanding what to expect from parenthood and BF, and anticipating the challenges of combining BF with farm labor
1J	Communicating needs to key players: Being able to convey needs regarding milk expression to key players at each level of SEMBA

2	Interpersonal (influence of family, friends, coworkers, housemates, or others in proximal social sphere that enable or challenge milk expression at work)	
2A	Receiving informational support: Perceiving self as receiving the information needed from her social network for success in combining BF and paid work	
2B	Receiving instrumental support: Perceiving self as receiving the instrumental support (e.g. breast pump, help with baby) needed from her social network to be successful in combining BF and employment	
2C	Receiving emotional support: Perceiving self as receiving the emotional support and encouragement needed from her social network to succeed in combining job and BF	
2D	Living in supportive housing situation: Feeling she has the support, privacy, cleanliness, and peace she needs in her home to BF/pump and manage the demands created by workplace milk expression	
2E	Enjoying the support of her inner circle: Taking comfort in having the necessary time, resources, and support from her family unit to succeed in combining BF and employment (e.g. help with other children, housework, etc.)	
3	Community and Cultural Norms (influence of societal norms and values, wider social networks, media, health care systems that enable or challenge milk expression at work)	
3A	Feeling influence of cultural norms and values: Accepting culture-based beliefs/influences or societal norms that affect her ability to succeed in combining BF and employment (e.g. stress dries up milk, Mexicans always BF)	
3B	Feeling that bottle feeding is preferred in U.S. society: Assuming that formula feeding is the societal norm and BF is not widely accepted	
3C	Requesting free formula from WIC: Believing that supplementation of BF babies with formula is necessary and innocuous, and that <i>los dos</i> is inevitable for farmworking mothers and babies	

3E	Receiving support from child care provider: Being reassured that child care provider will support BF and feed her baby her expressed milk while she is at work	
4	Work Environment (physical, temporal, and company/industry support characteristics that enable or challenge milk expression at work)	
4A	Finding space: Finding suitable pumping space that considers cleanliness, privacy, distance from worksite, handwashing station, etc.	
4B	Managing time: Managing time for pumping includes mode of transportation, start/stop times, timing of breaks, length of the workday, distance from the field to pumping site, etc.	
4C	Dealing with the elements and seasonality: Managing with exposure to temperature extremes, weather, wind, contaminants, type of crop, etc.	
4D	Working in different types of farm labor: Acknowledging that differences in company structure, work assignments, gender make-up of crews, and crops contribute to varied milk expression experiences	
4E	Receiving support from the company and industry: Acknowledging varying levels of support for lactation accommodation among industry organizations, company management, supervisors, and coworkers	
5	Structures, Policies, and Systems (local, state, federal, organizational laws and policies that enable or challenge milk expression at work)	
5A	Being aware of workplace lactation law: Understanding rights and avenues of appeal under federal and/or state public BF and workplace lactation law	
5B	Being aware of right of access to breast pumps: Taking advantage of access to breast pumps and lactation consultation, available through WIC and health insurers	

5C	Being aware of labor and immigration laws: Being aware of farm labor laws conducive to lactation accommodation, e.g. handwashing stations, break time, laws against sexual harassment, protection against retaliation for requesting accommodation	
5D	Taking advantage of family leave laws: Using paid family leave (in California) to establish BF and spend more time with baby and family before return to work	

APPENDIX H
REVISED CODING MANUAL

1	PUMPING FOR BABY – Mother-Child Level (sharing her love and healthy milk with baby even while at work) ^is a component of^	
A	Avoiding formula Not wanting to give formula for health reasons	“It's because for the majority it's real easy to say the formula, the formula has the same thing, does the same thing, and it's not that way, I mean it helps but I have noticed that with time of giving formula, lots of gases, the tummy gets bloated.” (M. p. 14)
B	Recognizing that BF reduces health care costs Believing that all BF babies help reduce public health burden	“If the person has Medi-Cal, any insurance, the government covers everything, right? A healthy child doesn't create expenses.” (C. p. 10)
C	Giving the best because of love Expressing her love by breastfeeding	“I think it's the huge love we feel for our children that makes us do whatever possible to give them the best. And especially because it's something from their mother, my son, they are closer.” (G. p. 1)
D	Nourishing by her own milk Wanting to provide part of myself to my baby	“My motivation was that my son would be nourished by my own milk because it has more benefits for them. That's why I decided to continue breastfeeding him.” (G. p. 1)
E	Pumping for baby's health Recognizing that babies that BF babies tend to be healthier	“It was because I saw how healthy my daughter was. She is a very healthy girl. She doesn't get sick and that motivated me to continue extracting my milk, for her health. And she is strong because she is healthy, healthy.” (N. p. 1)
F	Suffering of baby/self without pumping Not pumping causes baby to go without	“...if you deny in doing it [pumping] the only one affected here is the baby. The baby and one as a mother because you also suffer when your breasts get full and tight...” (M. p. 12)
G	Pumping to extend milk supply Pumping regularly enables longer BF duration for baby	“Just the same, it's wanting to continue [BF] up to where I can, or better yet, up to where I have production because like I said, it's not easy at work... But, the decision is strong, at least me personally to see how long I can breastfeed my baby.” (M. p. 4)

2	OVERCOMING ADVERSITY – Mother-Child Level (determined to stay the course of pumping despite the obstacles, being a “strong woman”) ^is a component of^	
A	Staying committed to pump Ignoring challenges and criticism, real and imagined, and remaining positive	“For bad or for good there is always criticism, so it is better to block all of that and try to think in our baby in that he needs that vitamin [in milk] and continue doing all that you can.” (M. p. 6)
B	Evaluating decision to pump Assessing situation, then feeling comfortable enough to pump	“...they asked me if I was going to... extract my milk at work, but I hadn’t decided completely because first I needed to be at work and see how things were like, how much time they gave me for breaks, or where I was going to extract the milk. So, after a week went by, I decided to extract my milk because I saw that it was okay to do it. I felt comfortable.” (G. p. 1)
C	Managing with break time provided Making do with time given despite the inadequacy	“So, I didn’t need extra time because I could manage during the break they gave us...” (G. p. 9)
D	Pumping as long as allowed Accepting that she will pump until she is forbidden by supervisor	“If the supervisor or the foreman comes and says, " You know here that [pumping] is not allowed", then that is no longer the co-worker, it's the boss that is prohibiting it and then even if I wanted to I wouldn't do it...” (M. p. 12)
3	FAMILY SUPPORT – Interpersonal Level (family contributes to her success in combining paid work and breastfeeding) ^is a component of^	
A	Being supported by family/inner circle Receiving social support allowing her to succeed	“The people closest to me supported me a lot, they have supported me, [they said] that this is the best decision I could have made, continue breastfeeding the baby.” (C. p. 1)
B		“...in my entire family nobody has given their babies formula. They always breastfeed. So, that’s a family thing. Even if we live in the city, but we don’t lose that tradition.” (G. p. 4)

4	COMMUNITY SUPPORT – Community Level (resources in the community help her combine paid work and breastfeeding) ^is a component of^	
A	Feeling encouraged by doctor Receiving affirmative support to BF from HCP	“They do tell you that it’s the best, that it provides many, how do you say? That it helps them a lot, so they don’t get too many illnesses and all that.” (T. p. 3)
B	Being supported by babysitter Receiving help from non-family childcare provider	“I Leave for work very relaxed knowing that this person takes very good care of him [baby].” (C. p. 6)
C	Being supported by WIC PC Receiving tools/info needed to pump at work from BF counselor	“...thanks to WIC, to the advice of my counselor...she helped me a lot, she helped me understand that female field workers have the right and the opportunity to pump in order to continue breastfeeding their babies.” (C. p. 1)
5	RISKING HEALTH – Mother-Child and Work Environment Levels (consequences of working and pumping in the field that may lead to adverse health outcomes) ^is a component of^	
A	Facing endangered health by pumping delays Postponing pumping breaks leads to breast pain/infection	“I told him [supervisor]: ‘not pumping frequently increases the problem. It causes a lot of pain, these balls that are formed and that hurts.’” (C. p. 5)
B	Feeling exhausted from daily routine Tiring from working/pumping/carrying and cleaning equipment	“...we walk a lot, it’s always from ten to fifteen minutes that we leave the cars parked here, then we have to carry our lunch box, and the machine, the ice, and all that, and we have to walk all the way there. And daily, daily, daily. You know, that’s tiring.” (N. p. 5)
C	Noticing lower milk production Pumping less and producing less milk for baby	“I am noticing that I am getting less milk...” (M. p. 7)
D	Feeling wet shirt Being self-conscious and uncomfortable with leaking breasts	“...my co-workers, I think if they see that I’m wet, there is a morbid fascination and all that...” (T. p. 6)

E	Taking fewer breaks for other personal needs Pumping milk impacts time for toilet/water/food needs	"...it's not easy at work. You don't eat the same, you aren't constantly with the water and you don't want to be going to the bathroom from one area to the next." (M. p. 4)
F	Working long hours Skipping pump/BF sessions due to long days/few days off	"I think that what's difficult is that we have so much work. Now it's many hours, from seven a.m. until seven p.m." (T. p. 5)
G	Worrying about milk safety Being concerned that long days/heat/wind impacts milk quality	"... ice will not last that many hours, so I start to think, what if, because it's still cold with a little ice but what if I save it and it's no good anymore and instead of doing him good he will get sick on me because of the milk that is no good anymore..." (M. p. 7)
6	FEELING STIGMATIZED – Interpersonal Level (avoidance of/exposure to criticism and invasion of privacy from disapproving coworkers) ^is a component of^	
A	Avoiding notice Pumping far from coworkers/covering herself to avoid unwanted attention	"But we try to go as far away from them as possible. But it's just that, the feeling of being a little embarrassed and not wanting my co-workers to watch me." (T. p. 7)
B	Experiencing criticism for BF in public Acknowledging stigma for her identification with openly BF culture	"And we have noticed that in our culture from Oaxaca, we breastfeed all the time. And even though there is a lot of criticism... 'She takes out her <i>chiche</i> ,' they say, and right there her baby is breastfeeding..." (N. p. 4)
C	Imagining what other people think Acknowledging she is acting outside the norm and is probably being criticized for pumping	"...in the end it is what I believe what I think they are saying when maybe they are not saying it at all." (M. p. 11)
D	Not pumping due to shame Deciding not to pump because of fear of others' reaction	"...on the first day...I didn't do it because of shame. For shame I said 'no, how are they going to look at me and how am I going to cover myself and then take it [the breast] out"...no, no it wasn't easy. Honestly, on the first break of my first day I did not do it because of shame..." (M. p. 6)

E	Being compared to a cow Hearing pumping women compared to a cow being milked	"I would see how the men would look at me and it was like "what is she doing?" and "the cow is being milked", things like that I would hear, right." (M. p. 6)
F	Being discouraged/criticized by coworkers Being told she has breastfed long enough or that she shouldn't be pumping at work	"Then they tell me: 'You have to walk all the way there. You don't take your break properly or your lunch. You have to, now that she is older, you fed her for 2 or 3 months, stop already.'" (N. p. 3)
G	Facing envy for time spent pumping Hearing others question why she is getting special break time	"Unfortunately, at the workplace or any other place, there are people who because they are envious or because they don't like a person, begin to make comments. These people at my workplace were bothered by the fact that I would leave my work to go pump... They asked why I enjoyed that privilege to leave my work to go sit in my car, they said, while they were working." (C. p. 7)
H	Experiencing stares/questions about pumping Suffering invasive curiosity from coworkers about her lactation	"What are you doing?" Sometimes they would stare and: "What are you doing?" When other crews with different people arrived and it was the first time they saw me doing that, they would tell me: "What's wrong with you?" (G. p. 3)
I	Having pump moved without permission Facing invasion of privacy having her belongings touched	"...some co-workers were annoyed that I left my [pump] bag there [in common area]. They would take it and move my bag over there." (N. p. 14)
J	Belonging to mostly male crew Recognizing difficulty maintaining modesty while working with men	"I think that in my group I am the first one that they have seen, because there are only six women in this group. There aren't more, there are only men that's why it's more difficult for us." (M. p. 10)
K	Feeling shame/discomfort to request lactation access Needing to request accommodation from male supervisors	"I tell them: "I'm going to lactate." And no, they don't know. And I feel embarrassed to tell them with different words. And then: "What is that?" "Oh, you can go in." And then, they open it for me. But things like that. It makes it uncomfortable for me." (N. p. 7)

L	Receiving respect because husband is present Acknowledging husband at her side mitigates criticism at work	"Nobody does [says vulgar things]. Maybe that's why, there is more respect because of that [referring to husband's presence]." (T. p. 8)
M	Keeping quiet to avoid arguments Sitting apart to avoid conflict rather than engage with critical coworkers	"But I always listened and kept quiet, ... because I don't like to have problems, and even less argue with other women..." (G. p. 3)
N	Acknowledging existence of gender-based harassment Understanding that inappropriate comments/behavior are daily occurrences for female farmworkers	"Harassment related to lactation in the field [goes] together with sexual harassment, because they go hand in hand." (C. p. 8)
7	FACING DISCRIMINATION FROM LEADERSHIP – Work Environment Level (lack of company training and oversight results in illegal acts and a hostile work environment) ^is a component of^	
A	Being threatened with loss of wages Facing retaliation after challenging company to take her full lactation breaks	"...the main supervisor arrived--and he told me: "You are taking too much time off [to pump]. We are going to deduct that time from your salary-- because what you have, the time you should take for that is ten minutes, once a day. I told him: "How is that possible?" I told him: "I need more time." (C. p. 4)
B	Experiencing/fearing retaliation for refusing romantic overtures Having lactation break time shortened after rejecting supervisor's overture	"[coworkers] started to pressure the foreman and [he]saw the need to tell me that I couldn't do that [pump in my car] anymore. Besides, there is something else. My daughter and I work together. We observed...that the foreman in the beginning had been...very nice to both of us. But it's because he was interested in us, in a different way. And since he was rejected by us, he paid attention to what the other people were saying, and I was affected by that decision..." (C. p. 7)

C	Fearing retaliation for requesting accommodation Giving up on asking for pumping shelter rather than risk anger of company reps	"I no longer want to do it [talk to HR] because I'm afraid to receive the same [negative] answer. Besides, if Human Resources is with this company, I'm going to get in trouble with my supervisor." (C. p. 8)
D	Experiencing lack of communication on company policy Being deprived of written/verbal information on company's lactation guidelines	"They have the right to give permission to the lactating women to extract their milk [and] the obligation to ask us if we want extra time, but they didn't give it to me. They didn't ask me." (G. p. 10) "...when I started, they gave me a booklet...I no longer have it, and I asked for another one and they haven't given it to me. It's kind of like they turn a blind eye, like they say. They don't give you the booklet just like that. I don't know. I haven't read what the company book says. (N. p. 8)
E	Noting poor communication among company representatives Observing lack of procedure to allot lactation space	"...since there are many supervisors, they work in rotation and they don't know. There is no communication between supervisors about the person who is breastfeeding. If there was, then I would just go, and they would be aware of it." (N. p. 11)
F	Not receiving support from company reps Feeling disappointed that support she deserves is not provided by supervisor/HR	"No support. None. The only thing I got from them was feeling disappointed." (C. p. 4)
G	Wishing for a longer parental leave Not given permission to stay home longer with baby	"...I didn't stay with my baby for very long...I would have liked for them to give me a few more months, ...but I didn't get permission." (N. p. 9)
8	DEPRIVAL OF LACTATION SPACE AND TIME – Work Environment Level (inadequate accommodation of time and space to pump in a safe, convenient, and private manner) ^is a component of^	
A	Being denied access to lactation space Facing restriction/arbitrary changes to private spaces adequate for pumping	"I struggle a lot, because they have this little room...-that they give us, sometimes it's closed. They have it locked. And they know it. They tell me: "We are going to leave it open for you." But

		when I arrive, it's closed. I have to wait until someone passes by to tell him [supervisor]: "Oh, could you call somebody to come and open it?" And I don't like it." (N. p. 6)
B	Pumping in the elements Working/pumping in hot/cold/wind/dark with little protection	"...because there are days that are...quite hot. I take an ice cooler and the ice melts. It doesn't withstand the high heat temperatures. There are very cloudy days, with a lot of breeze. That's also quite uncomfortable when one is pumping because of the weather. To uncover myself with that cold temperature...There are places where there is also a lot of dust, and there I am, pumping to empty my breasts." (C. p. 8)
C	Searching for an adequate space to pump Walking far distances away from coworkers to pump in privacy	"...there is nowhere where I can say that I will go hide. I'm out in the open and it's my decision [to pump]. (M. p. 6)
D	Being denied adequate pumping time Being restricted to how long and how often she can pump	"I need to walk up to five or ten minutes to get to where my car is and then pump. [to supervisor]: 'But you haven't paid attention to the time that takes me to walk. If you brought me the little house [pop-up tent] here, and I didn't have to walk, I would have it right here. And possibly, yes, in ten minutes I could extract my milk and there would be no problem.'" (C. p. 4)
E	Hearing conflicting information on pumping time Being allowed different amounts of break time by different supervisors	"My foreman was giving me enough time whenever I needed it. And suddenly, my supervisor arrives and tells me that that wasn't the [right amount of] time. The time I had been given was not the time allowed." (C. p. 3)
F	Having her pumping time monitored Being watched by supervisor after challenging time allowed	"In my current situation, I tell you, I'm pumping at noon. It's my lunch time. My car is quite far from where I work, and they are keeping track of my time from the moment I'm there with them until I return. But they don't take into account the time it takes me to get there and then go back." (C. p. 10)

9	SOCIAL SUPPORT AT WORK – Interpersonal and Work Environment Levels (help and encouragement received from coworkers and supervisors) ^is a component of^	
A	Accepting breast milk from a coworker Feeling grateful for donor milk when her supply was low	“There was a time when I stopped extracting my milk at work because my machine broke, and I didn’t have time to go to WIC and exchange it. So, I was left without milk and I couldn’t extract it, and a coworker gave me milk that she had stored and that she wasn’t giving to her son. And I gave my son that milk.” (G. p. 15)
B	Being encouraged by a coworker Taking helpful advice from a peer to ignore criticism	“Honestly, on the first break of my first day I did not do it because of shame and during that time I started thinking and a co-worker helped me. Oh, and I was forgetting, she helped me because she would tell me "ok, for giving credit to others you are going to leave your baby without eating?" (M. p. 6)
C	Being supported by a supervisor Enjoying extra break time/kindness by a supervisor	“...the managers are very kind They are supportive, yes. They tell you: “Go ahead and do it.” Or sometimes we take longer during our break because sometimes I prefer to eat and then pump, but then I go over my break. They don’t say anything.” (T. p. 4)
D	Experiencing respect at work Feeling that her crew mostly supports her	“Everything was very good. They did look at me weird, surprised, because we hadn’t seen anybody doing this, but offensive words or disrespect towards me, no. Everything was great.” (G. p. 12)
E	Receiving resources to facilitate pumping Being provided informational/instrumental support	“...they have always told us that if we have anything, any questions, there is a book in the bus where we can read about our rights, ...they take us to their truck.” (G. p. 9-10)

10	ADVOCATING FOR HER PEERS – Interpersonal, Work Environment, and Structures, Policies, Systems Levels (changing the pump-at-work culture for other women) ^is a component of^	
A	Hoping everyone can have partner support Appreciating support she has, and wishing the same for others	“The law helps us, but if he [husband] didn’t help me to take down the chairs, to take the backpacks, help me with my food and pump at the same time, it would be more difficult for me. So, I think that the most important thing is, I hope that every person who wants to breastfeed has her partner’s support.” (T. p. 6)
B	Recognizing she is the first to pump Acknowledging that no one else in her peer group pumped	“But I don't think that up to now like I've been here all this time working and I have never seen a woman pumping milk at work. It's been ten years and I have never seen a woman that just came back from caring for her baby and seeing her pumping.” (M. p. 10)
C	Recommending better support from company Voicing that companies should provide adequate time and designated space for moms to pump	“...it [company] should provide whatever is necessary for us to be more comfortable and not waste so much time, like they say. For example, wherever the van that takes us to the bathroom is located, they should place the little house (tent), a chair there. They should provide a quiet place to pump.” (C. p. 10)
D	Recommending mothers share feedback Feeling that mothers should support others and share their pumping experience	“I think that women should be encouraged more, they should be provided with feedback from other women, so they see that it isn’t difficult.... It’s not complicated. And advise them that the best thing for our children is to breastfeed them.” (G. p. 13)
E	Seeing BF as something normal Discrediting criticism against something natural and ignoring negative looks	“...we make a decision in seeing it that way, it's something normal, because a lot of times we think perhaps in the norm of men especially and for that reason it's that we say " Oh, the men are looking at me..." (M. p. 6)

F	Showing other women it's doable Setting an example for other mothers who might want to try pumping	"I think it's positive because many girlfriends have told me, ...they say that what I'm doing surprises them. But because they don't want to leave them [their babies] while they are so young and not do what I'm doing, they haven't worked... But they see that I can do it and then they say it's easy if I can do it. (T. p. 2)
G	Encouraging government to support BF women Feeling BF women contribute to the health of children and the community and deserve more support	"An illness of any kind is covered by the government... A healthy child doesn't create expenses. In that sense I think the government should help us more." (C. p. 9)
H	Recommending training for all workers Noting that supervisors/HR/coworkers lack knowledge on basics of lactation and law	Yes, that's why I don't understand why that job, if there have been so many mothers at that job before, it's about time that they are well trained. But they are not trained about having mothers who breastfeed. (N. p. 9)
11	LIVING UP TO THE CULTURAL VALUES OF MARIANISMO – Mother-Child, Interpersonal, and Community Levels (embracing her traditional Mexicana identity, putting others' needs above her own as she accepts her plight) ^is a component of^	
A	Carrying my BF culture with me Respecting BF traditions of Mexican homeland	"Our custom over there is [to breastfeed] for up to a year and a half, two years." (C. p. 2)
B	Understanding because we are women Feeling that women empathize with the struggle of pumping at work	"...none of them [coworkers] ever said anything to me. I think they understand because they are women as well." (G. p. 3)
C	Valuing what women have Challenging other women to value their breast milk and not waste it.	"...they should value more what we as women have, mother's milk for our children. And let's not waste mother's milk, because I heard a woman say...she had her baby, returned to work, and she said she was full of milk, and she would get home, extract it, and throw it all away. And she gave him formula instead." (G. p. 15)

D	Sacrificing own needs for baby Pumping despite discomfort, pain, and criticism	“Now, lactating women make a great sacrifice when we go to work, we support companies with our work, and we still take the time to extract our milk for our babies.” (C. p. 10)
E	Setting aside shame Working through feelings about others viewing her lactating body	“And not to be afraid, not to be embarrassed, to set aside all that and think more about their children’s welfare because mother’s milk is the best for our children. They should set aside their fear and embarrassment.” (G. p. 15)
12	TRUST IN THE LAW – Structures, Policies, and Systems Levels (believing in the support of lactation accommodation by government) ^is a component of^	
A	Feeling empowered to pump due to law Being motivated to pump at work with knowledge that it is sanctioned by government	“Because right now it’s like you said, the laws are, even the managers are more flexible with people.” (T. p. 7)

Note. Page numbers in right column refer to interview transcripts for each participant. M = Martha, C = Carmen, T = Tania, N = Nancy, and G = Gabriela.

APPENDIX I

MATRICES FOR SUB-QUESTION 2

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

Themes	Honoring Culture/Blazing the Trail	Honoring Culture/Blazing the Trail	Blazing the Trail	Honoring Culture	Blazing the Trail
Category	1, 2, 11 (Pumping for Baby; Overcoming Adversity; Marianismo)	3, 9, 10, 11 (Family Support; Social Support at Work; Advocating for her Peers; Marianismo)	2, 9, 10 (Overcoming Adversity; Social Support at Work; Advocating for her Peers)	4, 11 (Community Support; Marianismo)	10, 12 (Advocating for her Peers; Trust in the Law)
Ppt. ↓	Mother/Child Enablers	Interpersonal Enablers	Work Environment Enablers	Community Enablers	Systems Enablers
Martha #1	Avoiding formula; nourishing by own milk; pumping for baby's health; suffering of baby/self without pumping; extending milk supply; staying committed; pumping as long as allowed*; setting aside shame	Belonging to a BF family; being supported by family; being encouraged by a coworker; being supported by babysitter; being supported by WIC PC; recognizing she is first to pump; recommending better support from company; seeing BF as normal;	Pumping as long as allowed*	Feeling encouraged by doctor; carrying BF culture with me;	Feeling empowered to pump due to law
Martha next steps to sustain	Reinforcement of value of her effort at every level of SEMBA	Recognizing family members in BF messaging and education; continued training of all employees and the importance of their support/understanding	Reinforcing messages to employers on law; continued training of all employees	Messaging via media and provider organizations of benefits of supporting BF moms;	Messaging about law to parents, employers, HCP, media; feedback to WIC/government funders of benefit of PC program
Carmen #2	Pumping for baby's health; recognizing that BF reduces health care costs; sacrificing own needs for baby	Being supported by family; being supported by babysitter; being supported by WIC PC; recommending better support from company; encouraging government to support BF women	Being supported by a supervisor	Feeling encouraged by doctor; carrying my BF culture with me;	Feeling empowered to pump due to law
Carmen next steps	Reinforcement of value of her effort at every level of SEMBA	Recognizing family members in BF messaging and education; continued training of all employees; advocate for government to strengthen policy/implementation of law	Reinforcing messages to employers on law; continued training of all employees	Messaging via media and provider organizations of benefits of supporting BF moms;	Messaging about law to parents, employers, HCP, media; messaging to policy makers that BF/pumping reduces health care costs; feedback to WIC/government funders of benefit of PC program

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

Tania #3	Avoiding formula; giving the best for love; pumping for baby's health; sacrificing own needs for baby	Being supported by family; experiencing respect at work; being supported by babysitter; being supported by WIC PC; hoping everyone can have partner support; showing other women it's doable	Being supported by a supervisor	Carrying my BF culture with me;	Feeling empowered to pump due to law
Tania next steps	Reinforcement of value of her effort at every level of SEMBA	Recognizing family members in BF messaging and education; continued training of all employees	Reinforcing messages to employers on law; continued training of all employees	Media messaging of benefits of supporting BF	Messaging about law to parents, employers, HCP, media; feedback to WIC/government funders of benefit of PC program;
Nancy #4	Pumping for baby's health; suffering of baby/self without pumping; pumping to extend milk supply; staying committed to pump; sacrificing own needs for baby	Belonging to a BF family; being supported by family; being supported by WIC PC; recommending better support from company; seeing BF as something normal; recommending training for all workers		Feeling encouraged by doctor; carrying BF culture with me	
Nancy next steps	Reinforcement of value of her effort at every level of SEMBA	Recognizing family members in BF messaging and education		Messaging via media and provider organizations of benefits of supporting BF moms; feedback to WIC/government funders of benefit of PC program	
Gabriela #5	Giving the best for love; nourishing by own milk; staying committed to pump; evaluating decision to pump; managing with break time provided*; setting aside shame	Belonging to a BF family; being supported by family; being supported by WIC PC; accepting breast milk from coworker; experiencing respect at work; recognizing she is first to pump; recommending mothers share feedback; showing other women it's doable;	Receiving resources to facilitate pumping; managing with break time provided*	Carrying BF culture with me; understanding because we are women; valuing what women have	Feeling empowered to pump due to law

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

		recommending training for all workers			
Gabriela next steps	Reinforcement of value of her effort at every level of SEMBA	Recognizing family members in BF messaging and education; continued training of all employees	Reinforcing messages to employers on law; continued training of all employees	Media messaging of benefits of supporting BF	Messaging about law to parents, employers, HCP, media; feedback to WIC/government funders of benefit of PC program;

Note. * Code found in two levels of SEMBA

1 = Pumping for Baby; 2 = Overcoming Adversity; 3 = Family Support; 4 = Community Support; 5 = Risking Health; 6 = Feeling Stigmatized; 7 = Facing Discrimination from Leadership; 8 = Deprivation of Lactation Space and Time; 9 = Social Support at Work; 10 = Advocating for her Peers; 11 = Living up to Cultural Values of Marianismo; 12 = Trust in Law

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

Theme	Running the Gantlet	Running the Gantlet	Running the Gantlet	(Not) Honoring Culture	Blazing the Trail
Category	5 (Risking Health)	6 (Feeling Stigmatized)	5, 7, 8 (Risking Health; Facing Discrimination; Deprivation of Lactation Space/Time)	4 (Lack of) Community Support	10 (Advocating for her Peers: can be seen as enabler/ challenge)
Ppt. ↓	Mother/Child Challenges	Interpersonal Challenges	Work Environment Challenges	Community Challenges	Systems Challenges
Martha #1	Noticing lower milk production; taking fewer breaks for other personal needs*; working long hours*; worrying about milk safety	Imagining what other people think; not pumping due to shame; being compared to a cow; being discouraged by co-workers; experiencing stares/questions; belonging to mostly male crew; feeling shame to request access	Being denied access to lactation space; pumping in the elements; being denied adequate pumping time; taking fewer breaks for other personal needs*; working long hours*; experiencing lack of communication on company policy; not receiving support from company reps		
Martha needs	Needs more pumping breaks, better space to avoid safety fears (employer led)	Needs formal support from employer/co-workers, training for all staff	Employees at all levels need training on CA law; designation of nearby lactation space		
Carmen #2	Facing endangered health by pumping delays; feeling wet shirt;	Facing envy for time spent pumping; acknowledging existence of gender-based harassment	Being threatened with loss of wages; experiencing retaliation for refusing romantic overtures; fearing retaliation for requesting accommodation; not receiving support from company reps; being denied access to lactation space; pumping in the elements; being denied adequate pumping time; hearing conflicting info on	Seeing little coverage of BF in the media#	

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

			pumping time; having her pumping time monitored		
Carmen needs	Needs more frequent/timely breaks (employer led)	Needs coworker training, formal support from employer	Employees at all levels need training on CA law; designation of nearby lactation space	Needs Spanish language media to show more positive BF messages	Needs government to put more effort into supporting BF women
Tania #3	Feeling exhausted by daily routine; feeling wet shirt; working long hours*	Avoiding notice; experiencing stares; receiving respect due to husband; [respect due to husband is also enabler]	Being denied adequate pumping time; working long hours*	Not receiving HCP support	
Tania needs	Needs more pumping breaks (employer led)	Needs coworker training/ support from employer; privacy to pump	Employees at all levels need training on CA law	Needs HCP to receive more training on laws and how to support their patients	
Nancy #4	Feeling exhausted by daily routine; working long hours*	Experiencing criticism for BF in public; being discouraged/ criticized by coworkers; having pump moved w/out permission; feeling shame to request lactation access acknowledging existence of gender-based harassment	Being denied access to lactation space; pumping in the elements; working long hours*; experiencing lack of communication on company policy; not receiving support from company reps; noting poor communication among company reps; wishing for a longer parental leave		
Nancy needs		Needs coworker training, formal support from employer	Employees at all levels need training on CA law		
Gabriela #5	Working long hours*; worrying about milk safety	Avoiding notice; being compared to a cow; being	Working long hours*; experiencing lack of	Not receiving HCP support	

Sub-question #2 – What are the factors at each level of SEMBA that farmworking women perceive as challenges or enablers of returning to work, seeking lactation accommodation, and expressing milk in the workplace?

		discouraged/criticized by coworkers; experiencing stares/questions; keeping quiet to avoid arguments;	communication on company policy; not receiving support from company reps; pumping in the elements; searching for an adequate space to pump		
Gabriela needs	Needs place to safely pump/store milk safely (employer led)	Needs coworker training, formal support from employer	Employees at all levels need training on CA law; designation of nearby lactation space	Needs HCP to receive more information on law and how to support their patients	

Note. * Code found in two levels of SEMBA

1 = Pumping for Baby; 2 = Overcoming Adversity; 3 = Family Support; 4 = Community Support; 5 = Risking Health; 6 = Feeling Stigmatized; 7 = Facing Discrimination from Leadership; 8 = Deprivation of Lactation Space and Time; 9 = Social Support at Work; 10 = Advocating for her Peers; 11 = Living up to Cultural Values of Marianismo; 12 = Trust in Law

APPENDIX J
INSTITUTIONAL REVIEW BOARD APPROVAL



APPROVAL: EXPEDITED REVIEW

Elizabeth Reifsnider
 CONHI - Administration
 602/496-1394
 Elizabeth.Reifsnider@asu.edu

Dear Elizabeth Reifsnider:

On 1/4/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	An Exploration of Milk Expression in the Agricultural Workplace
Investigator:	Elizabeth Reifsnider
IRB ID:	STUDY00007345
Category of review:	(6) Voice, video, digital, or image recordings, (7)(b) Social science methods, (7)(a) Behavioral research
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • J.docx, Category: IRB Protocol; • Vaughan sociodemographic , Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Vaughan informed consent, Category: Consent Form; • CSVS approval , Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Vaughan semi-structured interview guide, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • MCHD Approval, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Vaughan outreach flyer, Category: Recruitment

	Materials;
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The IRB approved the protocol from 1/4/2018 to 1/3/2019 inclusive. Three weeks before 1/3/2019 you are to submit a completed Continuing Review application and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 1/3/2019 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Janet Vaughan
Elizabeth Reifsnider
Janet Vaughan
Deborah Williams
Bronwynne Evans