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MOTHERS' PERCEPTIONS OF WORKPLACE BREASTFEEDING SUPPORT

A Thesis Presented

by

Katrina Marie Russo Burks

to

The Faculty of the Graduate College

of

The University of Vermont

In Partial Fulfillment of the Requirements
For the Degree of Master of Science
Specializing in Nursing

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Abstract

Despite substantial evidence that breastfeeding is the optimal way to feed the healthy, full-term infant, data show that, although most mothers in the United States start out breastfeeding their infants, there are often barriers to continued breastfeeding beyond the first few weeks or months. Among the reasons cited are lack of support and the need to return to full or part time paid employment. As a result of the Surgeon General's 2011 Call to Action to Support Breastfeeding, many initiatives have been implemented on national, state, and local levels to improve support for breastfeeding in the workplace. The purpose of this study was to investigate mothers' perceptions of workplace breastfeeding support. The study surveyed a convenience sample of 44 women employed by a 562-bed academic and university medical center in Northern New England who had a baby less than two years ago. The Employee Perceptions of Breastfeeding Support Questionnaire was used to collect mothers' perceptions about organization support, manager support, co-worker support, time considerations, and the physical environment of the worksite breastfeeding or pumping facilities. Descriptive statistics revealed that mothers had favorable perceptions of support for breastfeeding in their workplace. Similar studies with different types of employers or with hospitals in different areas of the United States may have different results. Adapting breastfeeding accommodations and support in the workplace in ways that facilitate increased initiation and duration of breastfeeding is an important step toward achieving Healthy People 2020 goals.

Dedication

This thesis is dedicated to my children: Mitchell, Eleanor, William, and Charlotte.

You are the ones who made me a Mom.

My relationships with each of you--through breastfeeding and beyond—

have nurtured and sustained my passion for and dedication to breastfeeding.

I love you each with all of my heart,

and I thank you for sharing me with graduate school for the past three and a half years.

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I would like to express my gratitude to my thesis advisor Dr. Carol Buck-Rolland for her full support, expert guidance, understanding, and encouragement throughout this program and with my thesis work. My goal of becoming a Family Nurse Practitioner would not have been realized without her. I also wish to thank Dr. Amy O'Meara. Not only for her help with my thesis, but also for demonstrating confidence in me as a student and Lactation Consultant and trusting in me as a guest lecturer for her Maternal and Child Health courses over the past three years. Additionally, I would like to express my appreciation to Dr. Jamie Abaied for serving as my Committee Chair while fulfilling her commitments to her own students and family.

I would also like to acknowledge my fellow classmates in the Graduate Nursing Program at The University of Vermont. This program can be extremely challenging, and I'm honored to have made this academic journey with each of them. Special thanks to my preceptors, professors, instructors, and staff of the Department of Nursing for making my return to the academic world extremely worthwhile and for challenging me to learn more about myself than I ever realized I would. Extra special thanks goes to Dr. Jennifer Laurent who encouraged me from our very first meeting to get started on my thesis right away. Thanks also goes to Alan Howard for his help with the statistical portion of this work.

When people have made the comment "I don't know how you do it," I have always said that I'm not doing it alone. I could not have studied full-time and been a mom to four children without the support of my "village." My formal childcare provider

Lynn, as well as many family and friends who have encouraged and supported me and my family have truly made it possible for me to pursue my dream of this second career.

Finally, I would like to thank my family. My parents, Vincent and Sheila Kay Russo, for their never-wavering confidence in me and support of my belief that I can become whatever I set my mind to. My sister Anita Bartschat who has been my biggest cheerleader for more than 45 years; I couldn't have done this without her love and support to remind me of all the reasons I keep on doing what I do. My husband, Whip, who has demonstrated his commitment to me and our family as we continue to climb mountains and ford streams to make our dreams a reality.

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Chapter 1: Introduction

Breastfeeding is one of the most effective methods of protecting the health of a mother and her infant (US Department of Health and Human Services, 2011). Research has shown that the incidence and severity of many infectious diseases is decreased in breastfed infants compared to infants fed commercially-prepared infant formula, including otitis media (Ball & Wright, 1999; Dewey, Heinig, & Nommsen-Rivers, 1995), respiratory tract infections (Bachrach, Schwarz, & Bachrach, 2003; Oddy et al., 2004), and diarrhea (Heinig, 2001; Raisler, Alexander, & O'Campo, 1999). Although the majority of new mothers in the United States initially breastfeed their newborns, most do not continue as long as recommended. In 2011, 79.2% of US women initiated breastfeeding, 49.4% were still breastfeeding at six months, and 26.7% continued breastfeeding to twelve months (Breastfeeding, 2014a). These statistics differ slightly from 2010 data where 76.5% of women initiated breastfeeding, 49% were still breastfeeding at six months, and 27% continued breastfeeding to twelve months (Breastfeeding, 2013). Healthy People 2020 objectives include increased rates of breastfeeding as a key health goal (US Department of Health and Human Services, 2013). Specifically, the goals are to increase the proportion of mothers who initiate breastfeeding to 81.9%, the proportion who continue breastfeeding for six months to 60.6%, and the proportion who continue breastfeeding until one year to 34.1%.

In 2011, the Surgeon General of the United States issued a Call to Action to Support Breastfeeding (US Department of Health and Human Services, 2011). The executive summary of the report outlines 20 key actions to improve support of breastfeeding. These actions are delineated into categories and include focus on the roles

of mothers and their families, communities, health care, employment, research and surveillance, and public health infrastructure. Many barriers to successful breastfeeding have been identified, which encompass several areas including lack of support in hospitals, aggressive marketing by infant formula companies, negative societal attitudes, short maternity leave, and inconvenience at work (Cardenas & Major, 2005; Johnson & Esposito, 2007; Tuttle & Slavit, 2009). In the Call to Action to Support Breastfeeding, the Surgeon General of the United States highlights seven key barriers as a focus: lack of knowledge, lactation problems, poor family and social support, social norms, embarrassment, employment and child care, and health services (US Department of Health and Human Services, 2011).

In an effort to overcome barriers to successful breastfeeding among working mothers, many initiatives have been implemented on national, state, and local levels. The Patient Protection and Affordable Care Act (Affordable Care Act/ACA) addresses the barriers that exist in the workplace. The 2010 update of the ACA requires "employers to provide reasonable break time for an employee to express breast milk for her nursing child for one year after the child's birth each time such employee has need to express the milk. Employers are also required to provide a place, other than a bathroom, that is shielded from view and free from intrusion from co-workers and the public, which may be used by an employee to express breast milk" (United States Department of Labor, 2013).

Purpose

The purpose of this study was to assess the perceptions of employed mothers regarding the support of breastfeeding in their workplace. The CDC has recognized that

there are significant gaps in knowledge surrounding breastfeeding in the US (Breastfeeding, 2014b). There is a need for more research into barriers to breastfeeding among groups with low rates of breastfeeding, such as among mothers who are employed outside the home. Additionally, research investigating the economic impact of breastfeeding on employers and mothers is needed, as is more research aimed at the development of evidence-based practices for the management and support of breastfeeding. The results of this study could be used to provide a baseline when investigating the impact of interventions aimed at improving a woman's ability to combine work and breastfeeding. This knowledge could then be used to inform the evidence around these gaps in knowledge.

Rationale and Support for Importance of Study

Although humans have breastfed their offspring since the beginning of time, breastfeeding has not always been the most common way to feed a human infant. Many factors have influenced mothers' feeding options and choices including changing technology and social roles of women, cultural influences, availability of commercially-prepared artificial baby milks, and changing infant feeding and hospital birth practices. These factors will be discussed as they relate to the importance of this study.

History of infant feeding in the United States. Although reliable records of infant feeding practices in the United States in the early part of the 20th century are not available, comments in the literature of the time indicate that most infants were breastfed throughout most of the first year of life (Friedenwald & Ruhrah, 1905). At a time when infant mortality was high, data from a survey of eight U. S. cities in 1912-1919 found that

13% of infants were exclusively breastfed at twelve months of age, and that 45% were partially breastfed (Yankaur, 1994).

By the 1920s, improvements were made in the handling of dairy products and milk could be safely stored in homes because of the availability of the kitchen icebox. At the same time, scientists were determining the nutritional requirements of infants, and were able to "formulate" artificial baby milks. Feeding of orange juice and cod liver oil resulted in a decrease in the prevalence of scurvy and rickets, and using boiled or evaporated milk helped to make these formulas less prone to bacterial contamination. Home-prepared formulas were made from whole milk with added Karo syrup (Marriott & Davidson, 1923) or from evaporated milk diluted by 50% with water and added Karo syrup (Marriott, 1927).

Commercially-prepared infant formula. From the time of the late 1800s commercially prepared powdered formulas were made available that only needed to be mixed with water to be ready to feed to infants. However, because these products were significantly more expensive than home-prepared formulas, they were not widely used. In 1951, commercially-prepared concentrated liquid formulas were introduced and were strongly promoted by the formula manufacturers and as well as by pediatricians (Andleman & Sered, 1966). By the late 1960s, less than 10% of infants received home-prepared formulas. Commercially prepared infant formulas replaced the hospital-prepared formulas for hospitalized infants in the 1960s, largely due to the lower cost of purchasing the commercially-prepared product (Fomon, 1993). In 1963, ready-to-feed formulas in disposable bottles with disposable or reusable nipples became available, and

by 1970, nearly all newborn hospital nurseries used commercially-prepared, ready-to-feed formulas (Fomon, 1993).

At the time of rapid increase in the development and promotion of infant formulas, the rate and duration of breastfeeding in the US decreased dramatically. In 1971, less than 25% of infants were breastfed at all, and by two to three months of age, the percentage still breastfeeding was only 14% (Martinez, Dodd, & Samartgedes, 1981). The predominant feeding pattern for infants at this time included formula for the first four to six months and cow's milk after that. A report published in 1981provided evidence that fresh pasteurized cow's milk provoked blood loss in seemingly normal infants (Fomon, Ziegler, Nelson, & Edwards, 1981). After a second study corroborated these findings (Ziegler et al., 1990), a recommendation was made that infants who were not breastfed should be given iron-fortified infant formulas instead of cow's milk for the first year of life (Committee on Nutrition, 1992). As a result, over the next 10 years, the introduction of cow's milk was delayed, and infants were fed formula for longer periods of time. The percentage of six-month-old infants fed formula increased from 20% in 1971 to more than 50% in 1980 (Martinez, Dodd, & Samartgedes, 1981).

Introduction of solids. Over this same period of time, the introduction of foods other than breastmilk or infant formula was delayed by several months as well. In the early 1970s, most infants were fed other foods, such as iron-fortified infant cereal, by just six weeks of age (Fomon, 1975; Jerome, Kiser, & West, 1972). As rates of breastfeeding increased in the 1970s and early 1980s, infants began these "complementary" foods later as well; formula fed infants were more likely to start complementary foods earlier than breastfed infants (Fomon, 1993; Sarrett, Bain, & O'Leary, 1983). Although the average

age of introduction of complementary foods at the end of the 1990s was almost four months, this was still much earlier than the current American Academy of Pediatrics (AAP) recommendation of around six months of age (Eidelman, 2012). Additionally, there was an increase in the use of fruit juices in these infants. Fruit juice comprised 9.7% of complementary foods fed to infants to age one in 1971, and had grown to 16.7% by 1984 (Anderson & Ziegler, 1987).

The WHO Code and formula gift bags. In 1981, the World Health Organization published the International Code of Marketing of Breast-Milk Substitutes (WHO Code) (WHO, 1981). Part of the Preamble states:

> "Affirming the right of every child and pregnant and lactating woman to be adequately nourished as a means of attaining and maintaining health; recognizing that infant malnutrition is part of the wider problems of lack of education, poverty, and social injustice;…conscious that breast-feeding is an unequalled way of providing ideal food for the healthy growth and development of infants; that it forms a unique biological and emotional basis for the health of both mother and child; that the anti-infective properties of breast milk help to protect infants against disease; and that there is an important relationship between breast-feeding and child-spacing." (WHO, pp. 9-10)

The aim of the WHO Code is:

> "to contribute to the provision of safe and adequate nutrition for infants, by the protection and promotion of breast-feeding, and by ensuring the proper use of breast-milk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution." (WHO, p. 13)

Products within the scope of the WHO Code include breast-milk substitutes, including infant formula and foods marketed to be suitable for partial or total replacement of breast-milk, and to information concerning their use. As the WHO Code pertains to mothers and the general public,

> "There should be no advertising or other form of promotion to the general public of products within the scope of this Code. Manufacturers and distributors should not provide, directly or indirectly, to pregnant women, mothers or members of their families, samples of products within the scope of this Code." (WHO, p. 16)

Although the WHO Code is very clear in its message, there is no direct penalty to companies and individuals for not abiding by it.

By the beginning of the 21st century, rates of breastfeeding in the United States were showing a slow increase. Data from the National Immunization Survey for infants born between 2000 and 2004 revealed that 30.5% of infants were exclusively breastfed at three months, and 11.3% were exclusively breastfed at six months (CDC, 2007). These figures, however, were still far below the Healthy People 2010 goals of 60% at three months and 25% at six months. Data from the Infant Feeding Practices Study II that examined the effect of "gift bags" given to new mothers at hospital discharge may offer some insight into one of the major barriers to achieving Healthy People goals. Differences in rates of exclusive breastfeeding at 10 weeks were observed depending on what kind of bag the mother received at discharge. Women who received breastfeeding supplies were more likely to be exclusively breastfeeding at 10 weeks (OR = 1.77; 95% CI, 1.29-2.41), and women who received no bag were also significantly more likely to be exclusively breastfeeding at 10 weeks (OR =2.18; 955 CI, 1.07-4.42) than women who

received a bag with either formula or coupons (Sadacharan, Grossman, Matlak, & Merewood, 2014). At six months, the mothers who received either breastfeeding supplies or no bag were significantly more likely to breastfeed exclusively for six months (OR = 1.58; 95% CI, 1.06-2.36) than mothers who received a bag with formula or formula coupons.

Hospital practices. Breastfeeding-related maternity practices at hospitals and birth centers in 2007 were further shown to include practices that were not evidence-based, and that were known to interfere with breastfeeding (CDC, 2008). The sample consisted of 2,590 birth facilities in all 50 states of the US, the District of Columbia, and three US territories. Among the data collected, the highest mean score (80%) was for breastfeeding assistance, which included assessment, recording, and instruction on infant feeding. However, part of the instruction provided to new mothers in 65% of facilities included the advice to limit the duration of suckling at each feed, and 45% reported giving pacifiers to more than half of all healthy, full-term breastfed infants. Both of these practices have been shown to be not supportive of breastfeeding (Dewey, Nommsen-Rivers, Heinig, & Cohen, 2003). Additionally, 70–94% of facilities reported providing discharge bags containing formula to mothers who were exclusively breastfeeding (Merewood et al., 2008). For in-hospital feedings, 24% of facilities reported giving supplements as a general practice to more than half of all healthy, full-term infants, with 45% of these feeds being glucose water or plain water. Again, these practices have been shown to be not supportive of breastfeeding (Chantry, Dewey, Peerson, Wagner, & Nommsen-Rivers, 2014; Dewey et al., 2003; Parry, Ip, Chau, Wu, & Tarrant, 2013).

Baby-Friendly Hospital Initiative. Because hospitals play such an influential role in the first few days of the life of a new baby and mother, focusing efforts on hospital maternity wards to optimize breastfeeding has been a focus of the World Health Organization since 1989 that is starting to take hold in the US. The Baby Friendly Hospital Initiative (BFHI) (Baby-Friendly USA, 2014) is structured around the Ten Steps for Successful developed based on evidence-based practices that have been shown to increase initiation Breastfeeding (WHO, 1989). These steps are listed in Table 1. The Ten Steps were developed based on evidence-based practices that have been shown to increase initiation and duration of breastfeeding. In order to achieve and retain a Baby-Friendly designation, a hospital or birthing center must adhere to all ten steps.

Table 1
Ten Steps of the Baby Friendly Hospital Initiative

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding with-in a half hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming in -- allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center.

Institutions that have Baby-Friendly policies in place have shown significant increases in initiation of breastfeeding. Data from Boston Medical Center compared breastfeeding initiation rates before (1995), during (1998), and after (1999) Baby-Friendly practices were in place (Philipp et al., 2001). The 200 mothers in the study were primarily from poor, minority, and immigrant families. In this study, the breastfeeding initiation rate increased from 58% (1995) to 77.5% (1998) to 86.5% (1999). Data from hospitals that have had success with the BFHI have been utilized to foster increased utilization of best practices addressing the implementation of Baby-Friendly policies (Bartick, Edwards, Walker & Jenkins, 2010). One of the hospital practices that had been shown to be a barrier to the successful implementation of the Baby-Friendly Hospital Initiative is the delivery of infants by cesarean section (Rowe-Murray & Fisher, 2002). Operating room policies to facilitate initiation of breastfeeding after delivery while the mother is being sutured can help to meet step number four of the Ten Steps: help mothers initiate breastfeeding with a half-hour of birth.

The importance of breastfeeding for preterm and sick infants being cared for in a hospital's neonatal intensive care unit (NICU) can not be overemphasized. Mothers of these infants, however, often experience difficulties in establishing a milk supply because they frequently must hand-express or pump milk until their baby can effectively feed directly from the breast (Parker et al., 2013). Even among this population, BFHI has been shown to improve rates of breastfeeding initiation and duration to two weeks. A study of 117 infants in the NICU in 1999 compared with 142 infants in the NICU in 2009 at a US, inner-city, level 3 medical center showed improvements over the 10 years of Baby-Friendly Hospital status. Breastfeeding initiation increased from 74% in 1999 to

85% in 2009, and at two weeks the percentage of infants still receiving breastmilk was 66% in 1999 and 80% in 2009 (Parker et al., 2013).

Influence of health care providers. A mother's perception of the opinions of her health care provider about breastfeeding has been shown to be another important contributor to a mother's decision whether to initiate breastfeeding, and support from clinicians has been associated with breastfeeding duration (Odom, Li, Scanlon, Perrine, & Grummer-Strawn, 2014; Taveras et al., 2003). Recognizing the significant influence that primary care providers have to improve breastfeeding initiation and duration, The US Preventive Services Task Force has recommended that primary care providers do more to encourage mothers to breastfeed their children (Keuhn, 2008).

Guidelines have been published by the National Association of Pediatric Nurse Practitioners (NAPNAP) for Pediatric Nurse Practitioners to foster breastfeeding with their patients and families (NAPNAP, 2013). These guidelines are shown in Table 2.

These guidelines define the NP as uniquely qualified to develop and implement breastfeeding support and educational programs in the primary care setting. These types of primary care office interventions have proven to be successful in increasing breastfeeding initiation and duration. One study that employed the integration of lactation consultants into routine pre- and post-natal care demonstrated an increase in breastfeeding duration and intensity compared with care that did not include lactation consultants (Bonuck et al., 2013). Another primary care office intervention shown to

Table 2
NAPNAP Position Statement on Breastfeeding Guidelines for Nurse Practitioners

1. Promote informed choice about infant feeding practice by educating expectant parents, family members, and society about the nutritional, social, and economic advantages of feeding breast milk.
2. Identify support systems necessary to support the nutritional goals of breastfeeding mothers and those who choose to exclusively feed breast milk to their babies.
3. Advocate for breastfeeding within individual practice settings, the community, and at the legislative level.
4. Serve as an educational resource for other health care professionals, employers, and the general public regarding breastfeeding.
5. Participate in the design and implementation of local and national policies that promote and support breastfeeding and remove barriers to breastfeeding, including those in the workplace.
6. Participate in local and regional breastfeeding coalitions to actively promote the continued development and implementation of appropriate breastfeeding care policies in health facilities and communities.
7. Identify breastfeeding experts to participate on organizational committees and governing boards for the purpose of ensuring that breastfeeding promotion, protection, and support concerns are addressed in the development of policies and programs affecting women and children.
8. Promote, protect, and support breastfeeding as a global strategy to reduce infant morbidity and mortality in both developed and underdeveloped countries.
9. Recognize that infants are especially vulnerable during times of disaster, both human-made and natural; breast milk provides protection and is especially important at this time.
10. Conduct research and quality improvement projects related to breastfeeding so that PNPs can provide evidence based care to the breastfeeding dyad and families.

increase rates of breastfeeding is the implementation of the Academy of Breastfeeding Medicine's (ABM) clinical protocol: The Breastfeeding-Friendly Physician's Office, Part 1: Optimizing Care for Infants and Children (Chantry, Howard, Lawrence, & Powers, 2006). Results of a study of 757 mother-infant pairs in a before-and-after study design showed that when families received care based on the ABM clinical protocol, increased

rates of initiation and duration of exclusive breastfeeding were achieved (Corriveau, Drake, Kellams, & Rovnyak, 2013).

Influence of child care providers. When a woman returns to work after having a baby, the child care provider assumes an important role in the care and feeding of the infant. It has been shown that non-parental child care is associated with shorter breastfeeding duration, and a higher likelihood of weaning before the age of six months (Kim & Peterson, 2008; Shim, Kim, & Heiniger, 2012; Wasser et al., 2013). In one study of 183 mothers, when child care providers were viewed as supportive of breastfeeding, especially with regard to feeding expressed breast milk and allowing mothers to breastfeed their babies at the beginning and/or end of the day, breastfeeding was three times more likely to continue to six months than when child care providers were not supportive (Batan, Li, & Scanlon, 2013). Child care providers' knowledge of the health benefits of breastfeeding and the handling of breast milk for children in their care is one area for increased education. In Baton Rouge, Louisiana, a region where breastfeeding prevalence is low, child care providers were found to be generally supportive of breastfeeding, but had a deficit in knowledge about the benefits and handling of breastmilk (Lucas et al., 2013).

Peer support. Historically, women learned about breastfeeding from the time they were infants themselves. Living in communities of extended families or tribes, women were raised with breastfeeding as the only way to feed an infant. Knowledge about breastfeeding was gained through normal family life and a woman learned various methods of meeting the day to day needs of individual family members. When a woman gave birth, she was assisted by the other women. In the post-partum period, she was

cared for by her mother, sisters, aunts, and grandmothers. Because breastfeeding was a normal part of life, she and her infant both expected to breastfeed. Troubleshooting difficulties that arose was an ongoing process, facilitated by the other women in the group, and both mother and infant were allowed the best possible start. In the industrialized world, we are separated from our family groups; we no longer have our built-in systems of education and support. When it comes to childbirth and breastfeeding, we have a concerning deficit of knowledge and support.

One way to attempt to fill in for "the tribe" is through breastfeeding peer support programs. A meta-synthesis investigating women's perceptions and experiences of breastfeeding support was published in 2011 (Schmeid, Beake, Sheehan, McCourt, & Dykes, 2011). The authors found that the qualities that mattered most in supporting a breastfeeding woman included person-centered communication skills and relationships that provided continuity of caregiver. This fostered the most supportive care based on a trusting relationship and authentic presence. One organization that has become synonymous with breastfeeding support is La Leche League (LLL). LLL was started in 1956 by seven mothers who were breastfeeding at a time when breastfeeding rates in the US were at an all-time low (LLL, 2003). The purpose of LLL is to provide information and encouragement through personal help to all mothers who want to breastfeed their babies (LLL, 2004). "It recognizes the unique importance of one mother helping another to perceive the needs of her child and to learn the best means of fulfilling those needs" (LLL, 2007). Today, LLL is an international organization with Leaders who conduct group meetings for mothers and their partners, provide help over the phone or via email,

and even make home visits to help breastfeeding mothers to achieve their breastfeeding goals.

Socio-demographic characteristics of breastfeeding mothers in the US.

Published statistics of breastfeeding data for the US population as a whole obscures many clinically significant socio-demographic and cultural differences. (See Appendix A: US Breastfeeding Rates by Socio-Demographic Factors, 2007) In 2007, the most recent year for which this data is available, the national average for the 16,629 mothers sampled for initiation of breastfeeding was 75.0%, breastfeeding at six months was 43.0%, and breastfeeding at twelve months was 22.4% (CDC, 2013). Among the 2,895 Hispanic or Latino mothers, these rates were 80.6%, 46.0%, and 24.7%, respectively, while rates for the 2,606 Black or African American mothers were 59.7%, 27.9%, and 12.9%, respectively.

Maternal age, level of education, marital status, and socioeconomic status are more of the factors where breastfeeding differences lie. A mother who is 30 years old or older was more likely to breastfeed than a mother between 20 and 29. The older mothers had an initiation rate of 79.3%, 50.5% were still breastfeeding at six months, and 27.1% continued through twelve months or longer (CDC, 2013). The rates for breastfeeding in the younger mothers was 69.7%, 33.4%, and 16.1%, respectively. Rates of breastfeeding initiation for a college graduate compared to a high school graduate with no college experience was 88.3% compared to 66.1%. Again, the differences in duration of breastfeeding persist where a greater percentage of college graduates continued to breastfeed at six months (59.9%) and twelve months (31.1%) than high school graduates with no college experience (31.4% and 25.1%, respectively). Of the 12,444 married

mothers in the survey, 81.7% initiated breastfeeding, and 51.6% and 27.5% were still breastfeeding at six and twelve months, respectively. The 4,185 unmarried mothers in the survey initiated breastfeeding just 61.3% of the time, and continued to six and 12 months at rates of 25.5% and 11.9%, respectively.

When breastfeeding rates were examined by poverty income ratio, the 5,755 mothers at greater than or equal to 350% of the federal poverty threshold value had the highest rates of breastfeeding initiation and duration (84.4%, 54.0%, and 26.7%, respectively), while the 3,196 mothers at less than 100% of the federal poverty threshold value had the lowest rates (67.0%, 34.7%, and 19.0%, respectively). When looking at mothers based on whether or not they received benefits of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program, rates of breastfeeding initiation and duration for the 6,814 recipients were 67.5% initiation, 33.7% at six months, and just 17.5% at twelve months. Of the 8,143 mothers ineligible for WIC, 84.6% initiated breastfeeding, 54.2% were still breastfeeding at six months, and 27.6% continued to 12 months (CDC, 2013). Taken together, one could assume that women with the highest rates of breastfeeding initiation and duration are older, white, married, college-educated, and financially well-off.

Further investigation into factors associated with intention to breastfeed have revealed a strong influence of the length of maternity leave and number of hours the mother planned to work after her baby was born. A study utilizing 2005-2007 data from the IFPS II investigated 2,261 women's prenatal intentions to exclusively breastfeed her baby for at least the first few weeks (Mirkovic, Perrine, Scanlon, & Grummer-Strawn, 2014). Prenatal intentions to exclusively breastfeed varied by all socio-demographic

characteristics, and parallels the CDC data. As a whole, 59.5% of mothers planned to exclusively breastfeed during the first few weeks, 25.4% planned to exclusively formula feed, and 15.1% planned to use both formula and breastfeed (Mirkovic et al., 2014a). Mothers who planned to exclusively breastfeed were older, white, married, well-off financially, and college educated. However, across all socio-demographic characteristics, 69.5% of mothers who anticipated a maternity leave of thirteen weeks or longer intended to exclusively breastfeed, while just 52.8% of mothers with less than six weeks of leave planned to exclusively breastfeed. Likewise, 66.3% of mothers who planned to return to work less than thirty hours per week planned to exclusively breastfeed, while only 55.5% of those planning to work thirty or more hours per week had the same intentions (Mirkovic et al., 2014a).

Regional differences in rates of breastfeeding. Although data from the US as a whole demonstrates improving rates of breastfeeding initiation and duration, not surprisingly, there are variations by state. The most recent Breastfeeding Report Card from the CDC is based on the Centers for Disease Control and Prevention National Immunization Survey (NIS), 2011 births. (See Appendix B: CDC Breastfeeding Report Card, 2011. Data about the rates of ever breastfeeding, breastfeeding at six months, and breastfeeding at 12 months highlights the variability by state. The states with the highest rates reported of ever breastfeeding were California (92.8%), Oregon (91.9%), Montana (91.2%), Washington (91.8%), and Vermont (90.0%). The states with the lowest reported rates of ever breastfeeding were Louisiana (56.9%), West Virginia (59.3%), and Mississippi (61.5%). The rate of any breastfeeding at six months was highest in Vermont (66.5%), Oregon (64.4%), Alaska (64.3%), California (63.1%), and Hawaii (61.5%). The

states with the lowest reported rates of any breastfeeding at six months were Mississippi (28.9%), West Virginia (29.3%), and Kentucky (31.5%). Continuation of any breastfeeding at 12 months was highest in Vermont (45.3%), Alaska (42.5%), Utah (40.7%), and Oregon (40.2%). The states with the lowest rates of any breastfeeding at 12 months were Mississippi (10.0%), Alabama (11.8%), and Louisiana (12.6%).

The second part of the report focused on breastfeeding support indicators, including the percent of live births occurring at baby-friendly facilities, percent of breastfed infants receiving formula before two days of age, number of LLL Leaders per 1,000 live births, and whether or not the state has regulations supporting onsite breastfeeding in child care centers. The states with the highest percentage of live births occurring at baby-friendly facilities were New Hampshire (35.98%), Connecticut (28.56%), Maine (27.56%), and California (26.97%). Five states, Arkansas, Georgia, Kansas, Louisiana, and West Virginia, reported no births at baby-friendly facilities. The state with the lowest percentage of breastfed babies who received formula before two days of age was North Dakota (8.2%), followed by Vermont (8.5%), South Dakota (8.8%), and Montana (9.4%). The states with the highest percentage of breastfed babies who received formula before two days of age were New York (28.8%), New Jersey (28.4%), and Alabama (27.0%). Peer support in the form of number of LLL Leaders per 1,000 live births was highest in Vermont (3.01), Connecticut (2.30), Wyoming (2.23), and New Hampshire (2.01). The states with the fewest LLL Leaders per 1,000 live births were South Dakota (0.16), Delaware (0.36), Kentucky (0.36), and Oklahoma (0.39). Finally, at the time of the survey in 2011, only five states had child care regulations in

support of onsite breastfeeding: Arizona, California, Connecticut, Mississippi, and Vermont.

Conceptual Framework

The mid-range theory of Maternal Role Attainment or Becoming a Mother (Mercer, 2004) has described factors that contribute to a mother's sense of her identity. The four stages in the process of developing a maternal identity have been described as being: Commitment, attachment, and preparation (pregnancy); Acquaintance, learning, and physical restoration (first two to six weeks following birth); Moving toward a new normal (two weeks to four months); and Achievement of the maternal identity (around four months) (Mercer, 2004).

The stage of "moving toward a new normal" is often when mothers return to work. The woman must restructure her life to take into account her past experiences and future goals. Relationships with her partner, family, friends, and co-workers are now transformed as she incorporates her new responsibilities and identity of being a mother. Returning to work and continuing to breastfeed her infant is an example of a woman sorting out her priorities as she establishes her new identity as a mother. She might desire the benefits of working, and it is also very important to her to optimize the care and feeding of her child. The interaction between mother and child will continue to evolve throughout their lifetimes, and the mother's own identity will continue to evolve as well.

Significance

Laws and employer policies have been designed to facilitate continued breastfeeding among employed mothers (Vermont, 2014; Tuttle & Slavit, 2009). The intended effect of these laws and policies is to increase rates of breastfeeding among employed mothers. It is important to know how mothers perceive the support of breastfeeding in their own workplace in order to assess the effectiveness of the current laws and policies. The results of this study provide a baseline for mothers' perceptions of breastfeeding support as employees in an urban hospital in a predominantly rural state. This information can be utilized as an ongoing assessment tool as the organization implements organizational changes to further improve the support that it provides for breastfeeding mothers. This study was conducted to help understand the perceptions of employed mothers so that employers can provide the space, time, and breastfeeding-friendly culture that positively impact a woman's ability to combine working and breastfeeding.

Relationship to Advanced Practice Nursing

Advanced practice nursing is a concept which "builds on the foundation and core values of the nursing discipline" (Hamric, p. 67). The primary criteria for advanced practice nursing include graduate education, certification, and practice focused on a patient or family. Advanced practice nursing encompasses the roles of four specialized nursing roles: Nurse Practitioner (NP), Clinical Nurse Specialist (CNS), Certified Nurse-Midwife (CNM), and Certified Registered Nurse Anesthetist (CRNA). The NP role is the focus of this study.

Seven core competencies have been identified by the National Organization of NP Faculties (NONPF), with "independent practice" as the central competency (NONPF, 2012). The six remaining core competencies of advanced practice nursing include leadership, quality, practice inquiry, technology and information literacy, policy, health delivery system, and ethics (NONPF, 2012). The relationship of this study to the applicable NP core competencies will be discussed.

Independent practice. The central competency of independent practice is addressed in this study as NPs deliver care for mothers and infants impacted by the combination of breastfeeding and employment. An important focus in the clinical practice of an NP is optimizing the health of patients and families. Successfully combining breastfeeding and employment is one of the ways to optimize the health of the mother and baby. When employers are able to implement programs and provide time and space to facilitate the ability of a mother to nurse or pump milk at work, and mothers feel supported and empowered to utilize them, success can be realized. An NP can provide care for a nursing mother and child knowing that the breastfeeding relationship is continuing, even though the mother has returned to work. This knowledge affects the way the NP interacts with the family, and she/he can provide true patient-focused care that is highly valued by patients (Day, Egli, & Silver, 1970; Flanagan, 1998).

The interaction between the NP and the patient or client is one that can be viewed as coaching. There are many transition situations that require coaching, such as puberty, chronic illness, weight loss or gain, change in social supports, loss of loved ones, and caring for older relatives (Spross & Babine, 2014). Pregnancy, labor, becoming a mother, and returning to employment after the birth of a baby are transitions situations

that involve many complex decisions on the part of a woman and her family. This study explored some of the factors that women may consider when making these decisions. The NP can provide current, evidence based information related to the benefits of breastfeeding, and can help a new mother weigh her options related to breastfeeding to develop plans to achieve the goals that she sets for herself.

Scientific foundation. When making decisions about individual patient care, the NP uses a scientific foundation of research-based evidence in the most "conscientious, explicit, and judicious" (Gray, p.237) way. The NP scientific foundation competencies call upon the NP to ask the questions that define evidence-based practice when conducting a critical evaluation of a research study. Evaluating the study purpose, sample size, validity of measurement instruments, data analysis, and importance of the research to clinical practice is a way to determine the weight that a study carries. Research has demonstrated decreased rates and duration of breastfeeding among working mothers (Aurthur, Saenz, & Replogle, 2003; Mandal, Roe, & Fein, 2010; Mirkovic, Perrine, Scanlon, & Grummer-Strawn, 2014a; Ogbuanu, Glover, Probst, Hussey & Liu, 2011; Ryan, Zhou, & Arensberg, 2006). Additionally, employer lactation support programs have been shown to increase rates and duration of breastfeeding in this population (Fein, Mandal, & Roe, 2008; Garvin et al., 2013; Shealy, Li, Benton-Davis, & Grummer-Strawn, 2005; United States Breastfeeding Committee [USBC], 2010). These results may not be generalizable to the specific population and workplace in this study. A thorough review of the literature (Chapter 2) has identified gaps in the current research and opportunities for further study.

The gap in knowledge identified and examined with this study is one part of determining how well policies and laws intended to increase rates and duration of breastfeeding are achieving their goals in a specific setting. The perceptions of employed mothers about the support for breastfeeding in their individual workplaces will have an impact on whether the mother is able to successfully combine breastfeeding and employment. The perceptions of mothers is just one factor that contributes to the success of interventions aimed at increasing breastfeeding rates and duration to meet Healthy People 2020 goals. Ongoing evaluation of the impact of an intervention allows for changes to be made to continue to improve outcomes. This ongoing evaluation allows for the best clinical practice where interventions are truly evidence-based and most beneficial for the individual patient.

Utilization of an instrument with demonstrated reliability and validity is an important part of conducting research. The investigator contacted the author of the survey instrument used in this study: The Employee Perceptions of Breastfeeding Support Questionnaire (EPBS-Q) (Greene, Wolfe & Olson, 2008) (Appendix C). After contacting the survey author, permission to use the survey in this study was obtained. An agreement was made to provide appropriate citations in this study and to notify the survey author with results of this study. These steps have been taken.

Leadership. Addressing the nationwide Healthy People 2020 objectives regarding increased rates of breastfeeding as a key health goal (US Department of Health and Human Services, 2013) is one way that this study involves the NP core competency of leadership. By assessing the progress toward goals, and utilizing this information to continue to address barriers, the goals of increased rates of breastfeeding initiation and

duration to six and twelve months can be achieved. This study takes steps toward achieving Healthy People 2020 goals by assessing the perceptions of mothers regarding the breastfeeding support in their workplace. Support for breastfeeding in the workplace is one component that contributes to a mother's ability to continue to breastfeed once she has returned to work.

The NP leadership competency will also be demonstrated by disseminating the results of this study, recommendations for further study, and implications for the participant hospital. After this information has been presented to the NRC, the investigator will incorporate feedback into a plan to disseminate the information more broadly. Leadership is manifested when research is shared in a setting where the results can help to inform modifications to policy and practice.

Quality. The NP competency of quality has been demonstrated in this study in many areas. The nature of the study as part of the requirements for the degree of Master of Science specializing in nursing by definition requires skills in peer review. The thesis committee is comprised of two faculty members from the department of nursing, and a committee chairperson from the graduate college outside of the department of nursing. All three of these individuals have given valuable feedback during all phases of the study. A semester-long seminar entitled "Master's Thesis Research," which is a required course in the NP program, provided a forum for idea-sharing among graduate students, professors, and invited speakers. This format allowed for peer consultation and was instrumental in gathering information to move toward successful completion of the study.

The information technology specialist at UVM was consulted for assistance with the statistical portion of this study. This is an example of utilizing best-available

resources to achieve the highest quality data analysis. The consultant was approached to address a "lack of knowledge, skill, confidence, or objectivity" (Vosit-Steller & Morse, p. 216). The specialist was able to educate the investigator about different ways to look at the data, and helped the investigator to make decisions regarding further analysis. This consultation allowed for both the consulter and the consultant to use their individual skills to address the situation of data analysis.

Practice inquiry. The NP competency of practice inquiry was demonstrated in this study with the Nursing Research Collaborative (NRC) at the participant hospital. Because the study subjects included nurses and other employees at the hospital, the NRC was consulted to ensure that nursing care and workflow would not be negatively impacted in any way. The NRC identified the hospital Employee Knowledge Fair as a viable venue for subject recruitment. Without their input, this approach, which was proactive in ensuring quality, may not have been considered.

Results and implications of this study will be presented to the NRC. Their feedback will help guide this investigator in further dissemination of the information to other interested parties at the participant hospital and to breastfeeding support organizations. The hospital could use this information to adapt current policies to further enhance the ability of their breastfeeding employees to combine breastfeeding and working.

Ethics. The NP competency of ethics is one of the most important; it surrounds every aspect of nursing care and conduct (Thomas et al., 2012). In this study, one of the most important considerations was regarding the recruitment of subjects. The original recruitment plan involved placing flyers in employee break rooms with information about

how to contact the investigator about participating. This approach may have presented a problem with interruption of the workflow of the employees, as they would have to add another task to their already-full workloads. A second approach involved providing managers with surveys to distribute to employees who met the inclusion criteria. This could be perceived as coercion if the employee felt as though she didn't have the option to decline to participate in the study. The recruitment that was ultimately utilized was for the investigator to be present with surveys at the affiliated university "Department of Nursing" table at the participant hospital one-day Employee Knowledge Fair. In a large room filled with people representing numerous hospital departments, schools and universities, and other related services, individuals had the choice to approach the investigator or not. The ethical decision was also made to include all mothers who had a baby under two years old, whether or not they had breastfed that child. In this setting, limiting the subjects to only those mothers who had breastfed would have placed women in a situation where they could be seen and identified as one who had breastfed or not, which she may not want to share. Additionally, completed surveys were kept in a locked file and contained no identifying information.

Summary of NP competencies. In summary, this study described the perceptions of a group of mothers about workplace support of breastfeeding. The study incorporated key NP competencies. Describing the perceptions of mothers supports the professional role of the NP by focusing on the mother and her needs in combining breastfeeding and employment; consulting with peers, professors, specialists, and members of the NRC to ensure high quality; providing leadership to address Healthy

People 2020 goals; and utilizing a scientific foundation of research-based evidence and ethical decision-making throughout.

Research Question

Given the current evidence and support for breastfeeding, what are mothers' perceptions of workplace breastfeeding support?

Chapter 2: Literature Review

The AAP Policy Statement on Breastfeeding and the Use of Human Milk (2012) has established recommendations for exclusive breastfeeding for a baby's first six months of age, followed by the addition of complementary foods to continued breastfeeding through the baby's first year, and continuation of breastfeeding for as long as desired by both mother and infant (Eidelman et al., 2012). The World Health Organization (WHO, 2011) and UNICEF have offered an even stronger recommendation:

> Initiation of breastfeeding within the first hour after the birth; exclusive breastfeeding for the first six months; and continued breastfeeding for two years or more, together with safe, nutritionally adequate, age appropriate, responsive complementary feeding starting in the sixth month. (UNICEF, 2014)

Although breastfeeding rates have increased over the past four decades, the actual rates of breastfeeding in the United States do not reflect the recommendations set forth by these leading experts in child and public health. In 2011 in the US, 79.2% of women initiated breastfeeding, 49.4% were still breastfeeding at six months, and 26.7% continued breastfeeding to twelve months (Breastfeeding, 2014a).

There are many factors to consider when investigating the reasons for lower-than-recommended rates and duration of breastfeeding in the US The Surgeon General Call to Action to Support Breastfeeding (USDHHS, 2011) identified many of the most common barriers to successful breastfeeding. The seven barriers addressed in the Call to Action were found to be: Lack of knowledge, Lactation problems, Poor family and social support, Social norms, Embarrassment, Employment and child care, and Health services (USDHHS, 2011). The US Department of Labor has reported that 57.3% of mothers of

infants, and 61.1% of mothers with children under the age of three were employed outside the home in 2013 (Women's Bureau, 2014). Mothers employed outside the home were as likely to initiate breastfeeding as stay-at-home mothers; however, mothers who were not employed were more than twice as likely to be breastfeeding at six months as were mothers who worked full time (Ryan, Zhou, & Arensberg, 2006). In light of the large percentage of mothers who work outside the home, and the low rates of breastfeeding in this population, investigating the barriers to successful breastfeeding among working mothers and ways to identify and overcome these barriers is an important endeavor.

To address the focus of this study, literature surrounding the support of breastfeeding in the workplace was reviewed. The literature was studied to determine the factors that contribute to lower rates or improved rates of breastfeeding for employed mothers, and initiatives aimed at improving the rates of initiation and duration of breastfeeding for employed mothers. The databases of CINAHL, Google Scholar, and Ovid MEDLINE were used to collect research articles that were primary sources of research, guidelines, or research reports. The key words used in searches were: breastfeeding, lactation, women, employment/workplace, barriers, and support.

Factors Associated with Positive or Negative Impact on Breastfeeding Rates

Many barriers to successful breastfeeding among employed mothers have been identified. Five aspects of the work environment that contribute to a mother's overall perception of workplace breastfeeding support have been described: Company policies/work culture, Manager support/lack of support, Co-worker support/lack of

support, Workflow, and the Physical environment of the breastfeeding space (Greene & Olson, 2008). The impact of each of these factors were reviewed.

Company policies/work culture. Data shows that 61.1 % of US mothers with children under three years old are employed (Women's Bureau, 2014). Employers, however, are not always certain about their role in breastfeeding support or about what actions they could take to support and promote breastfeeding. Early research by Bridges, Frank, and Curtin (1997) described the views of 69 rural employers. These employers were supportive of employees breastfeeding when they had prior experience with employees who breastfed, knew of other businesses who employed breastfeeding women, or both. In 2001, Brown, Poag, and Kasprzycki conducted focus groups with human resource professionals from 18 businesses to gather information about employers' knowledge, attitudes, and practices in providing breastfeeding support for their employees. The businesses included a variety of industries, and were equally divided between large (more than 150 employees) and small (fewer than 150 employees). These businesses had no established breastfeeding policies, and addressed breastfeeding on an as needed basis. Although the details of exactly what provisions were made for breastfeeding employees were not included in the published work, there was a trend where larger employers were more likely to set up dedicated lactation rooms, and smaller employers tended to allow mothers to use an office with a sign on the door to provide privacy during pumping or nursing. The authors summarized their research by stating that further investigation should be conducted to design effective employer lactation support guidelines so that breastfeeding or pumping while at work does not interfere with

job demands, and that job demands do not interfere with breastfeeding or pumping at work (Brown et al., 2001).

Support of mothers who combine employment and breastfeeding has slowly increased over the past few decades. Although no national data identifying the percentage of employers that provide workplace breastfeeding support is available, several studies have investigated these rates in certain populations. In 2004, quantitative-descriptive questionnaire study surveyed 157 Colorado employers (Dunn, Zavela, Cline, & Cost, 2004). The survey respondents included 44 small (fewer than 50 employees), 69 medium (between 50 and 499 employees), and 44 large (500 or more employees) businesses. When asked if the company provided formal breastfeeding support, only 28.2% answered "Yes," with significant differences between small businesses (25.6%), medium businesses (17.4%), and large businesses (47.7%). However, services and benefits that help to create a breastfeeding-friendly workplace were provided in a much larger percentage of businesses. Some of these benefits and services included maternity leave for three months or more (84.7%); flextime, job sharing, or part-time employment options (71.9%); refrigerator for breast milk storage (70.5%); and breaks for pumping or breastfeeding an infant (61.9%). Several other benefits and services were not widely available in these businesses, including on-site daycare (8.8%), electric breast pumps (8.1%), breastfeeding counselor or lactation consultant on staff (6.6%), and specific written policies addressing workplace breastfeeding support (4.4%) (Dunn et al., 2004).

More recently, Stratton and Henry (2011) conducted one-on-one semi-structured interviews designed to answer three questions: (1) What are the employers' beliefs about outcomes they may experience from providing workplace breastfeeding support (WBS)?;

(2) What are the employers' attitudes towards providing WBS?; and (3) What are employers' intentions regarding provision of WBS? Seven businesses in an urban Illinois setting employing primarily low-income, hourly-wage, full-time workers were selected through purposive sampling. Businesses ranged in size from fifteen to 2000 employees. The findings from these interviews revealed five main themes: (1) Support for breastfeeding was considered on a case-by-case basis, and that the cost of providing breastfeeding support outweighed the benefits; (2) Although employers had positive attitudes about workplace breastfeeding support in general, there was a lack of formal action to support breastfeeding employees; (3) Despite expression of intent to support breastfeeding employees when requested, the employers interviewed had no intentions of implementing formal breastfeeding support programs; (4) Employers perceived limitations due to business size; and (5) Employers were unsure about the extent of their role in providing workplace breastfeeding support (Stratton & Henry, 2011).

Part-time versus full-time employment. Part-time employment is one factor that has been shown to contribute to breastfeeding success. Early research by Fein and Roe (1998) revealed in a survey of 1,488 predominantly Caucasian mothers that mothers working part-time, defined as less than 35 hours per week or a maximum of seven hours a day, had no decrease in breastfeeding initiation or duration compared to nonworking mothers. The same correlation between full-time employment and shorter duration of breastfeeding was found in a study of 146 physician mothers by Aurthur et al. (2003). Longitudinal data from over 1400 mothers in the Infant Feeding Practices Study II, collected between 2005 and 2007, was analyzed for the impact of the number of hours the mother expected to work on breastfeeding initiation and duration (Mandal et al., 2010).

A strong correlation between part-time employment and increased breastfeeding initiation and duration was observed, even when mothers' actual hours worked and baby's age when she returned to work were controlled for.

Data from the Early Childhood Longitudinal Study-Birth Cohort (2011) was utilized to investigate the effect of postpartum employment and occupational type on breastfeeding initiation and duration. Of the group of mothers who were currently working when their babies were nine months old (n = 4,500), the mothers employed part-time had higher rates of breastfeeding initiation (71.9%) and a greater proportion still breastfeeding at six months (42.5%) than mothers employed full-time: (66.8% and 27.5%, respectively) (Ogbuanu et al., 2011a). Data from studies exploring maternal work status and breastfeeding initiation and duration have continued to strongly support the connection between part-time employment and successful breastfeeding (Odum, Li, Scanlon, Perrine, & Grummer-Strawn, 2013; Mirkovic, Perrine, Scanlon, & Grummer-Strawn, 2014b; Thulier & Mercer, 2009). A study published in 2014 included 2,348 prenatally employed women in the Infant Feeding Practices Survey II (2005-2007). The study found that a mother's plans for part-time or full-time work status after her maternity leave had a direct impact on her plans to breastfeed. Mothers who were planning to work full-time were significantly less likely to initiate breastfeeding (55.0%) than mothers planning to work part-time (66.3%) (Mirkovic et al., 2014a).

Length of maternity leave. The length of maternity leave before returning to work is another factor that has been shown to impact the success of combining breastfeeding with employment. The correlation between longer maternity leave and longer breastfeeding duration was observed in large studies by Lindberg (1996) and

Kimbro (2006). Lindberg's nationwide survey of 2,431 mothers determined that the older the child when the mother returned to work, the less likely she was to stop breastfeeding. Kimbro's survey included 2,446 breastfeeding mothers who had returned to work, and reported the odds of quitting breastfeeding was 25 to 34% greater for mothers returning to work when compared with stay-at-home mothers. Further support of longer maternity leave to promote breastfeeding initiation and duration comes from data from 2348 prenatally employed mothers in the Infant Feeding Practices Study II, collected between 2005 and 2007 (Mandal, Roe, & Fein, 2010; Mirkovic et al., 2014a; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011b). These studies found that a mother who was returning to work prior to 12 weeks (or three months) was less likely to initiate breastfeeding than a mother who was planning to return to work after 12 weeks (or three months): 64.6% compared with 74.2%, respectively. Additionally, the proportion of women who were continuing to breastfeed beyond six months was greatest among the women who had not yet returned to work at the nine-month mark (46.7%), and lowest among the women who returned to work after less than 12 weeks (or three months) (30.1%) (Ogbuano et al., 2011b).

The relationship between length of maternity leave and duration of breastfeeding was quantified in a publication by Roe, Whittington, Fein, and Teisl (1999). Among the group of 712 mothers nationwide who initiated breastfeeding in the Infant Feeding Practices Survey, each week of maternity leave increased breastfeeding duration by almost one half week (Roe et al., 1999).

Manager support/lack of support. A manager who is supportive of combining breastfeeding and employment has been shown to be an essential factor for employees to

meet their breastfeeding goals. Miller, Miller, and Chism (1996) studied a group of 60 resident physician mothers. Although only nine (15%) were breastfeeding at six months, the most important facilitator to continued breastfeeding cited by the women, even 20 years ago, was a supportive supervising physician.

The attitudes of managers have been found to directly influence female employees' perceptions of workplace breastfeeding support. Chow, Fulmer, and Olson (2011) conducted five focus groups with a total of 25 managers in the state of Michigan to assess attitudes of managers toward supporting breastfeeding. The authors found that managers were aware of some, but not all, of the benefits of breastfeeding, and that they were able to identify some, but not all, barriers and facilitators to combining breastfeeding and employment. Results from this qualitative study were used to develop an instrument to measure managers' attitudes toward workplace breastfeeding support (Chow, Wolfe, & Olson, 2012). The Managers' Attitude Toward Breastfeeding Support Questionnaire could be used "to collect data in a standardized manner within and across companies to measure and compare manager attitudes toward supporting breastfeeding" (Chow et al., 2013, p. 1042). Organizations would then be able to utilize this data to implement strategies focusing on influencing managerial attitude to improve support for employee breastfeeding.

When workplace breastfeeding support programs are implemented, managers' perceptions of their own ability to support breastfeeding employees, their attitudes toward breastfeeding, and their intent to provide support for breastfeeding employees have been shown to improve significantly. Using a convenience sample of 49 hospital supervisors, managers, administrators, and charge nurses, an anonymous online survey asked

individuals to rate their agreement with breastfeeding support items as Low, Moderate, or High, and a mean score was calculated based on the responses. Mean scores were higher after one year of implementation of a hospital-wide breastfeeding support program, which demonstrated increase in managers' support of breastfeeding (Rojjanasrirat & Ferrarello, 2013). Small sample size prevented a determination of statistical significance. The authors, however, have suggested that the organization-wide program helped to clarify roles and expectations of managers, which lead to overall increase in support.

Co-worker support/lack of support. Literature exploring the contribution of co-worker support to the successful combination of employment and breastfeeding is minimal. Prior to the publication of a study by Seijts (2004), which investigated co-worker perceptions of outcome fairness of breastfeeding accommodation in the workplace, no studies had been published to investigate the perceptions of co-workers of breastfeeding employees. Study participants included: Senior undergraduate business students, 66 males and 79 females, enrolled at a North-American university; and 100 bank employees, city workers, and middle managers, 55 males and 44 females, living in Ontario, Canada. In this study, vignettes describing different ways that organizations handled the needs of a breastfeeding mother were presented to study participants. Participants responded to the vignettes using Likert-type scale responses to indicate how much they agreed or disagreed with statements such as: "The breastfeeding policy in this company would encourage me to accept a position if I were offered one" or "The policy toward employees who want to breastfeed at work implemented by this company is fair" (Seijts, 2004, p. 6). The organizations in the vignettes that provided breastfeeding accommodations were rated as more fair overall than the organizations that were

described as less accommodating. These organizations received the highest fairness ratings by participants who were parents themselves. On the contrary, participants who believed that breastfeeding was a private issue that does not belong in the workplace believed this accommodation was less fair. The author concluded that breastfeeding accommodations in the workplace may be more of a "need-based" concern, but there was no evidence that employees resented breastfeeding accommodation in the workplace (Seijts, 2004). Because interpersonal interactions are a major part of a woman's work days, further research is needed to determine the perceptions and effects of co-worker support on breastfeeding initiation and duration (Stewart-Glenn, 2008). Perhaps this is because the study of breastfeeding and employment is still seeking to define and prioritize all of the barriers and facilitators involved.

Workflow. The time that it takes to either pump milk or directly breastfeed an infant during the course of the work day is a consideration that influences mothers' perceptions of workplace breastfeeding support. A mother must determine how she will incorporate this activity into her day, and must be proficient at pumping as it becomes a necessary job skill. The frequency and time to express breastmilk in the workplace was studied in a cohort of 387 mothers employed by a large corporation that provided a comprehensive on-site lactation program (Slusser, Lange, Dickson, Hawkes, & Cohen, 2004). Data used in this study was based on a national prospective survey of infant feeding practices conducted from November 1, 1997, through January 31, 1999, by CIGNA Corporation, a global provider of employee benefits. At three months and six months postpartum, mothers reported pumping milk twice a day, for a total combined time of less than one hour. The authors note that this is the same amount of break time

that was reported by women employed by this corporation, whether or not they were mothers or breastfed their babies (Slusser et al., 2004). Studies that include the specific influence of the time and frequency needed to breastfeed or pump breastmilk at work are limited. This factor is one that needs more focus in research because it can provide specific quantifiable information for employers to consider when developing breastfeeding-friendly work practices.

Physical environment. The physical environment available for a mother to nurse her baby or pump milk has been found to be a crucial component of workplace breastfeeding support. In studies where mothers did not have breastfeeding or pumping stations at work, they resorted to pumping in the restroom. This approach has been associated with premature weaning (Brown, Poag, & Kasprzycki, 2001; Rojjanasrirat, 2004; Stevens & Janke, 2003; Witters-Green, 2003). Conversely, access to a physical environment conducive to breastfeeding or pumping has been shown to improve rates of breastfeeding among working mothers. One study described the breastfeeding duration to six months and one year for 462 women employed full-time by one of five corporations in California: two accounting firms, one entertainment industry company, one incorporated city government, and one service corporation. With access to on-site lactation rooms with hospital-grade breast pumps, professional lactation support, and time to express milk, these mothers had longer durations of breastfeeding at six months (57.8%) and one year (18.5%) than the average employed woman in the United States (36.2% at six months and 17.2% at one year) (Ortiz, McGilligan, & Kelly, 2004).

A recent study by Tsai (2013) reinforced the role that a breastfeeding-friendly workplace can play in the complex decision-making process that a working mother must

employ when she decides to continue breastfeeding after returning to work. A group of 981 women employed in a labor-intensive work environment by a large electronics company in Taiwan who had recently taken maternity leave completed questionnaires seeking to understand the mothers' perceptions of breastfeeding support at their workplace. The women reported their perceptions of access to a lactation room, breastfeeding-friendly policies, and support when raising their most recently born child. Although 85% of mothers in this study had access to a dedicated lactation room, most of the subjects (63.8%) did not use pumping breaks, and 50.2% did not continue to breastfeed after returning to work (Tsai, 2013). Two of the factors identified as important in combining employment and breastfeeding for the first six months were taking advantage of pumping breaks, and encouragement by colleagues or supervisors to take pumping breaks. For continuing to breastfeed past six months, a higher education level, lower work load, dedicated lactation room, taking pumping breaks, and encouragement by colleagues or supervisors to take pumping breaks were correlated with the mother's intention to continue to breastfeed for more than six months after returning to work (Tsai, 2013).

Although creating a private space for mothers to pump breastmilk or breastfeed can be a challenge for employers, many employers have reported that they would be willing to provide such spaces. Libbus and Bullock (2002) conducted a survey of 85 employers in a small, Midwestern city in the US. More than half (54%) of employers surveyed indicated that they were willing to establish breastfeeding or pumping areas, even though fewer than half had personal experience with breastfeeding (Libbus & Bullock, 2002). While 35% of employers believed that breastfeeding should be allowed

in the workplace, between 75% and 82% of employers saw little value to their business of supporting breastfeeding in the work environment. These results underscore the need for extensive public and employer education regarding breastfeeding to effect long-term change.

Implementation of Strategies for Improving Workplace Breastfeeding Support

Before formal policies in support of breastfeeding or pumping at work were in place, mothers figured out ways on their own to continue breastfeeding while employed. To examine what strategies for combining breastfeeding and employment were most beneficial for maintaining intensity and duration of breastfeeding, Fein, Mandal, & Roe (2008) used a sample of 810 mothers from the US Infant Feeding Practices Study II (IFPS II) who were engaged in paid work and breastfeeding. The demographic characteristics of this subsample tended to have the characteristics associated with longer duration of breastfeeding; they were older, had higher income and education, and were more likely to be white and married than the total IFPS II sample. The four strategies used by mothers were: (1) Feeding the baby directly from the breast only (32% of mothers); (2) Both pump and feed directly (14% of mothers); (3) Pump only (43% of mothers); and (4) Neither pump nor breastfeed during the work day (11% of mothers). While the percent of feedings that were breastmilk changed minimally (-3.3% to -5.5%) in the first three strategies, the strategy of neither pumping nor directly breastfeeding during the work day showed a reduction of 20.9% in breastmilk feeds (Fein et al., 2008). Duration of breastfeeding was also diminished when a mother did not pump or directly breastfeed during the work day. Results showed a duration of 14.3 weeks of breastfeeding after returning to work for the mothers who did not pump of breastfeed

directly, while mothers utilizing strategies that included pumping or direct breastfeeding during the workday continued to breastfeed for between 26.3 and 32.4 weeks after returning to work (Fein et al., 2008). These results strongly suggest that the opportunity for a working mother to either breastfeed directly or pump milk during the work day is essential for success in combining breastfeeding and employment.

Centers for Disease Control. In 2005, the CDC published "The CDC Guide to Breastfeeding Interventions" (Shealy, Li, Benton-Davis, & Grummer-Strawn, 2005). This document established rationales and steps that employers can take to provide a workplace that is supportive of breastfeeding. When developing a support program, the employer must consider the number of women who will need support and the resources available; this will help to determine whether the employer should utilize "adequate," "expanded," or "comprehensive" support strategies for breastfeeding in the workplace (Shealy et al., 2005).

Key components of a successful workplace breastfeeding support program were described early on to include the space, time, and support for breastfeeding or pumping (Bar-Yam, 1998). The physical space would ideally be centrally located with adequate lighting and ventilation, privacy, seating, an electrical outlet, and possibly a sink and refrigerator. At that time, it was suggested that the time needed for breastfeeding or pumping could be provided with flexible work schedules, using break time for pumping, or job sharing (Bar-Yam, 1998). More recent studies have shown that longer maternity leaves and part-time employment contribute significantly to sustaining breastfeeding (Ogbuanu et al., 2011). Further, the digital age provides even more options for mothers such as telecommuting, working from home, and flexible hours (Feldman-Winter, 2013).

Business Case for Breastfeeding. To address the need to improve conditions that allow the combination of working and breastfeeding, the United States Breastfeeding Committee (USBC) published a document titled: Workplace Accommodations to Support and Protect Breastfeeding (USBC, 2010). Section 3 provides key points for the business case for workplace lactation support. These three points are as follows: "(1) Lactation programs are cost-effective, showing a $3 return on $1 investment, (2) By supporting lactation at work, employers can reduce turnover, lower recruitment and training costs, cut rates of absenteeism, boost morale and productivity, and reduce health care costs, and (3) Lactation accommodation is not a one-size-fits-all proposition. Flexible programs can be designed to meet the needs of both the employer and employee" (USBC, p.8). The Business Case for Breastfeeding was designed as a toolkit with comprehensive resources to help employers create a breastfeeding-friendly workplace using the three points highlighted by the United States Breastfeeding Committee. The toolkit includes booklets for business and human resource managers to use to support employees who are breastfeeding, as well as an employee's guide to breastfeeding and working. The toolkit, including a CD-ROM and reproducible resources, may be ordered free of charge to recipients in the United States from the Department of Health and Human Services website (Business Case for Breastfeeding, 2012).

Evaluation of the implementation of The Business Case for Breastfeeding in Southeastern Virginia was published by Garvin et al. (2013). The one-year project was effective in assisting employers to establish and maintain lactation support programs. Seventeen healthcare facilities implemented changes based on The Business Case for

Breastfeeding. After an average of eight months with these interventions in place, 14 organizations continued to provide lactation support (Garvin et al., 2013). Although The Business Case for Breastfeeding programs are still being implemented, there is no data to date on the effect of the programs on rates and duration of breastfeeding among mothers employed by these organizations. In view of the fact that the programs are still being implemented, the rates of breastfeeding initiation and duration may be higher among these organizations than organizations without formal lactation programs. Further research needs to be conducted to determine if this is in fact true.

Children's Hospital of Philadelphia (CHOP). CHOP is one employer that has demonstrated significant improvement in breastfeeding among its employees through implementation of an organization-wide lactation support program. This program was put in place in 2005, even before the ACA mandate that breastfeeding employees be given time and space that is not a bathroom to be able to pump milk while working (ACA, 2010). In a 12 hour shift, a breastfeeding mother was allowed three 30-minute breaks in one of more than 15 dedicated on-site pumping rooms. Additionally, CHOP provided prenatal lactation classes, access to lactation resources, and employees had the option to purchase personal use breast pumps at manufacturer cost (Spatz, 2005). A prospective, descriptive study of 545 female CHOP employees who filed for maternity leave from 2007- 20011 found that initiation and duration of breastfeeding was higher in CHOP employees than national averages (Spatz & Kim, 2013). Although pre-intervention data was not reported, breastfeeding initiation among CHOP employees after the implementation of the support program was 94.5% compared to the 76.9% national average ($p < 0.0001$), continuation to six months was 78.6% compared to the 47.2%

national average ($p < 0.0001$), and continuation to breastfeed for one full year was 32.4% compared to the 2.5% national average ($p = 0.003$).

"**Intangible" organizational support.** A longitudinal and multilevel analysis to investigate employee perceptions of organizational family support was conducted using a sample of 310 professional, managerial, and technical employees with middle-class incomes in in the New York metropolitan area who had been at their current employer for at least one year (Thompson, Jahn, Kopelman, & Prottas, 2004). One of the questions being studied was whether employee perceptions of organizational support (tangible, intangible, and supervisory) was linked with commitment to the organization, work-family conflict (both work interferes with family and family interferes with work), and job search behavior. Tangible support included family-friendly company policies to assist with work-life balance. Intangible support was described as strengthening family support systems and respecting employees' desires to balance work and family. Supervisory support addressed the employees' perceptions of how understanding their supervisor would be when someone had to leave early or come in late due to a family emergency. Results of this study showed that employee perceptions of intangible organizational family support were even more strongly associated with commitment to the organization and to reduced work-to-family conflict than the tangible organizational support (Beta coefficients were .26, $p < .001$, and -.31, $p < .001$, respectively for the perceptions of intangible support; and $\beta = .24$, $p < .01$, and $\beta = -.15$, $p < .01$, respectively for the perceptions of tangible support (Thompson et al., 2004). Although specific support of breastfeeding was not studied, this research supports the thought that it may not be the tangible policies or practices alone that inform the employee's perceptions.

The more intangible aspects of an organization's culture, support from supervisor and co-workers, and respect for employee's non-work lives appear to significantly impact how committed the employee is to the organization, and the level of work-interferes-with-family conflict experienced by the employee (Thompson et al., 2004).

Instruments to Measure Employee Perceptions of Workplace Breastfeeding Support

Although studies using an instrument designed to predict early breastfeeding attrition have been conducted (Dick et al., 2002), there has not been widespread adoption of an instrument to consistently measure women's perceptions of breastfeeding support in the workplace. The Employee Perceptions of Breastfeeding Support Questionnaire (EPBS-Q) (See Appendix C) was developed and validated to provide a standardized way to collect data pertaining to mothers' perceptions of workplace breastfeeding support (Greene & Olson, 2008; Greene, Wolfe, & Olson, 2008). The instrument includes 42 items to assess five aspects of the work climate: Organization support (11 items), Manager support (12 items), Co-worker support (six items), Time (three items), and Physical environment (nine items). Data gathered using this instrument could provide valuable data for organizations to utilize when making improvements to support working mothers. The pilot study using this instrument collected data via self-administered mailed questionnaires filled out by 104 pregnant women or women who had recently given birth and were employed in a non-managerial role and breastfeeding. Data analysis suggests that the EPBS-Q measures are valid for use in similar populations. However, no published studies have utilized this specific instrument to date.

In 2012, an investigation conducted in Pakistan found no reliable instrument to determine mothers' perceptions of workplace support that could be used with Pakistani

women. Consequently, the 29-item Perceived Breastfeeding Support Assessment Tool was developed that could be used with Pakistani urban working mothers (Hirani, Karmaliani, Christie, Parpio, & Rafique, 2013). This tool, written in Urdu, identified two dimensions of support: Workplace environmental support (12 items) and Social environmental support (17 items). Although the data collected through the use of this tool could ultimately be utilized to improve child health in Pakistan, no published studies to date have used this tool.

A study investigating the relationship of lactation accommodation in the workplace with duration of exclusive breastfeeding collected data using an instrument similar to the EPBS-Q (Bai & Wunderlich). The study included 113 working mothers who were primarily white (89.4%), older (mean age 33.8 [6.0] years), highly educated (>82% above college graduate), and married (92%). This survey looked at four dimensions of breastfeeding accommodation: break time (frequent enough, long enough, able to adjust timing, co-workers to cover job duties), workplace environment (breastfeeding common, co-workers and manager believe in benefits of breastfeeding, able to find a place to BF or pump other than a bathroom), technical support (availability of refrigerator, breast pump, on-site child care), and workplace policy (job at risk if breastfeed or pump, enough maternity leave, written policies about breastfeeding or pumping at work). The authors found that technical support ($r = 0.71$, $P = .01$) and workplace environment ($r = 0.26$, $P = .01$) were significantly associated with the duration of exclusive breastfeeding.

Summary

In summary, a number of factors associated with positive or negative impacts on rates of breastfeeding have been identified. Working mothers who wish to continue breastfeeding face significant challenges, and research investigating successful strategies for mothers to combine breastfeeding and employment is not plentiful. Components of the overall employment environment that can impact a mother's breastfeeding success include: organizational policies, manager support, co-worker support, time constraints, and the physical environment available for pumping breastmilk during the work day. This study describes mothers' perceptions of the support for breastfeeding in the workplace, which can help to identify areas for employers to focus on when addressing the needs of working mothers.

Chapter 3: Methodology

This chapter describes the research design, definitions, setting of the study, subjects and sampling strategy, and how the human subjects were protected. A description of the survey instrument used, and data analysis are also included.

Research Design

A survey design was used in this exploratory descriptive study. Study participants completed the survey one time in paper format.

Definitions

Hospital: The healthcare system sites including main campus inpatient, main campus outpatient, and other outpatient clinic sites.

Survey: Employee Perceptions of Breastfeeding Support Questionnaire (EPBS-Q) (See *Instrument*)

Setting

This study was conducted using a convenience sample of 44 women employed by an urban 562-bed academic and university medical center in a predominantly rural Northern New England state. The hospital employs approximately 7,150 individuals across a wide variety of demographics in both inpatient and outpatient settings. Approval to conduct the study was obtained from the Institutional Review Board (IRB) of the affiliated university.

Subjects and Sampling Strategy

The investigator recruited subjects on May 7, 2014 at the participant hospital's Employee Knowledge Fair at an exhibit table with the affiliated university's Department of Nursing. The investigator invited individuals to participate when they approached the

affiliated university's Department of Nursing exhibit table. Inclusion criteria for participation included: women, age 18 and older, who had given birth in the past two years, employed by the hospital, and had the ability to read English. Small cards printed with information about local breastfeeding laws and community support organizations were also available at the display for any Knowledge Fair attendees who wished to take them.

Once they indicated that they would be willing to participate, subjects were provided with three documents: a study information sheet (Appendix F), a demographic survey (Appendix G), and the EPBS-Q (see *Instrument*) (Appendix C). The information sheet included information about the study such as the study's purpose, costs, compensation, confidentiality, and contact information for the principle investigator and faculty sponsor. There were no costs incurred or compensation provided for study participants. The demographic survey asked questions to confirm employment, work site location, type of work, age range, and age of youngest child. When the participant had completed the surveys, she left the completed surveys with the investigator in a secure box. Subjects were informed that they could complete the surveys at the Knowledge Fair, or they could take a stamped envelope addressed to the investigator, complete the surveys later, and mail the completed surveys to the investigator. Participants were asked to complete and return the surveys within one week of the Knowledge Fair.

Consent was implied upon completion of the surveys. No identifying information was obtained from study participants.

Protection of Human Subjects

This study complied with all requirements of the affiliated university's IRB to ensure protection of human subjects. Additionally, this study proposal was approved by the NRC at the participant hospital.

Instrument

The EPBS-Q was used to collect data (Greene, Wolfe & Olson, 2008) (Appendix C). Permission to use this instrument was obtained via email contact with the authors, who provided a copy of the instrument to the investigator (Appendix E). The EPBS-Q contains 42 items that require either categorical yes/no or Likert scale responses. Survey items are grouped together to evaluate five aspects of the work climate: organization support (11 items), manager support (12 items), co-worker support (six items), time (three items), and physical environment (nine items). Internal consistency reliability coefficients of the EPBS-Q were high (0.87 and 0.89) and the correlation between the subscales was moderately strong (0.68) in the pilot study (n=104) (Greene, Wolfe & Olson, 2008).

Demographic data was also collected using six additional survey questions. The additional questions determined confirmation of employment, full-time or part-time status, work site location, type of work, age range, and age of youngest child (Appendix D).

Data Analysis

Responses to each item of the EPBS-Q were recorded in a categorical yes/no or Likert scale as Strongly Agree (SA), Agree (A), Disagree (D), or Strongly Disagree (SD).

Data collected was analyzed by frequency of responses to each item using IBM SPSS Statistics 22 software (Appendix H).

The software used for data analysis was IBM SPSS Statistics 22. Frequency tables were produced for each of the six questions on the demographic survey and for 41 questions of the EBPS-Q. A cross tabulation was performed of job status (part-time or full-time) crossed with the other questions. A chi-square test compared the proportions of the responses in the other questions between part-time and full-time employees. Question 42 of the EBPS-Q asked for additional comments. These comments were transcribed.

Chapter 4: Results

Recruitment

Of the 44 total participants, 18 completed the surveys at the Knowledge Fair, and 26 submitted their surveys in the mail. Seven additional surveys were distributed for return by mail, but were not received. Of the 33 surveys distributed at the Knowledge Fair to be returned by mail there was a return rate of 78%.

Subjects

Demographics of study participants are shown in Appendix D. Of 44 total subjects, 19 (43%) worked part-time, and 25 (56%) worked full-time (Figure 1). Nearly all subjects (*n* = 32, 72.7%) reported their primary worksite as "Main Campus Inpatient", while the remaining 12 subjects reported "Main Campus Outpatient" (Figure 2).

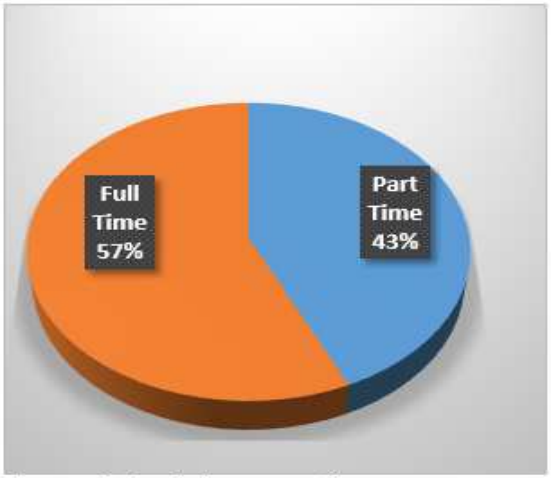


Figure 1: Participant employee status

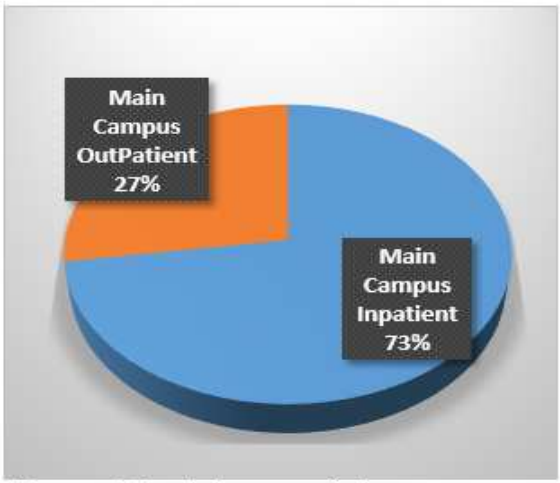


Figure 2: Participant worksite

When reporting job role, almost half (*n* = 18, 40.9%) of study participants were nurses; ten (22.7%) worked in administrative or clerical roles; four (9.1%) identified

themselves as “allied health”; four (9.1%) identified themselves as “management”; four (9.1%) reported their role as “physician/NP/PA”; two subjects (4.5%) identified “other professional” as their role; and two subjects (4.5%) identified their role as “service/maintenance” (Figure 3).

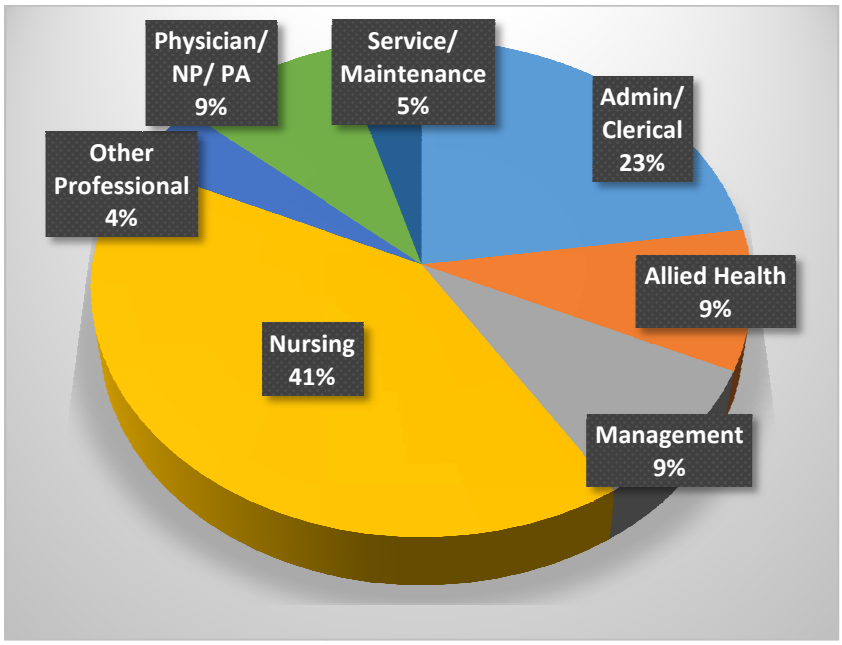


Figure 3: Participant job role

Of the 44 study subjects, 27 (61%) were aged 26-33, 13 (29.5%) were aged 34-41, three (6.8%) were aged 18-25, and one (2.3%) was 42 years old or older (Figure 4).

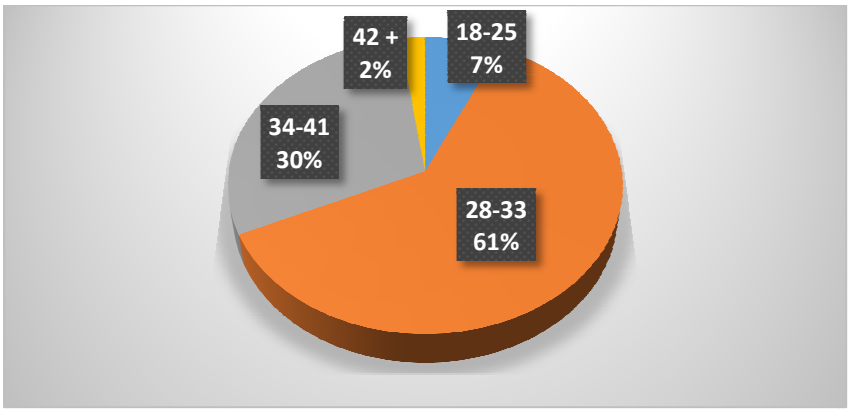


Figure 4: Participant age

Statistics and Data Analysis. Data collected was analyzed by frequency of responses to each item using IBM SPSS Statistics 22 software (Appendix H) and is shown in Table 3.

Table 3:
Frequency of responses on EPBS-Q

Item	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
ORGANIZATION SUPPORT				
I would have enough maternity leave to start BF	68.2	25.0	6.8	0
I would be able to get information from my company	31.8	56.8	6.8	4.5
My company has written policies about BF	43.2	50.0	6.8	0
There is a place I could go to BF or pump at work	72.7	27.3	0	0
There is someone at work who would help me	34.1	54.5	6.8	4.5
My job would be at risk if I BF or pumped at work	0	0	25	75
I would be able to talk about BF at work	38.6	54.5	6.8	0

I would feel comfortable asking for accommodations	29.5	54.5	15.9	0
My opportunities for advancement would be limited	0	13.6	29.5	56.8
Women in higher-level positions have BF or pumped at work	47.7	52.3	0	0
Co-workers have BF or pumped at work	77.3	22.7	0	0
	Strongly Agree (%)	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**
MANAGER SUPPORT				
My manager would support me BF or pumping	47.7	52.3	0	0
My manager would help me combine BF and work	40.9	54.5	4.5	0
My manager would think I couldn't get my work done	2.3	2.3	52.3	43.2
I would feel comfortable speaking with my manager about BF	25	70.5	2.3	2.3
My manager says things that make me think he/she supports BF	22.7	70.5	4.5	2.3
My manager would view BF as a personal choice	31.8	68.2	0	0
My manager would consider it part of his/her job to help me	15.9	50.0	31.8	2.3
My manager would think less of workers who BF or pump	2.3	6.8	40.9	50.0
My manager would make sure my job is covered	18.2	56.8	25	0
My manger would change my schedule	18.2	47.7	29.5	4.5

My manager would help me with my workload	13.6	52.3	34.1	0
My manager would be embarrassed if I spoke about BF	4.5	2.3	40.9	52.3
	Strongly Agree (%)	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**
CO-WORKER SUPPORT				
My co-workers would think less of workers who BF or pump	0	2.3	50.0	47.7
I would feel comfortable speaking with my co-workers	31.8	59.1	9.1	0
My co-workers say things that make me think they support BF	40.9	50.0	9.1	0
My co-workers would change break times	20.5	59.1	20.5	0
My co-workers would cover my job duties	20.5	63.6	15.9	0
My co-workers would be embarrassed if I talked about BF	2.3	4.5	47.7	45.5
	Strongly Agree (%)	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**
PHYSICAL ENVIRONMENT				
My breaks are frequent enough for BF or pumping	9.1	70.5	20.5	0
My breaks are long enough for BF or pumping	13.6	68.2	15.9	2.3
I could adjust my break schedule to BF or pump	27.3	52.3	20.5	0
I could buy or borrow the equipment I need	No 2.3	Yes 97.7	---	---
My company would provide the equipment	No 63.6	Yes 36.4	---	---
I could safely store expressed breast milk at work	No 9.1	Yes 90.9	---	---

There is a designated place to BF or pump	No 0	Yes 100	---	---
The designated place would be available when I needed it	34.1	43.2	11.4	11.4
The place is close enough to my area to use during breaks	31.8	56.8	9.1	2.3
I would feel comfortable using the place	40.9	52.3	6.8	0
The designated place is satisfactory	36.4	50.0	11.4	2.3
The designated place includes everything I need	38.6	47.7	9.1	4.5

Organization support. The employees' perceptions of organizational support was overwhelmingly positive as shown in Figures 5, 6, and 7.

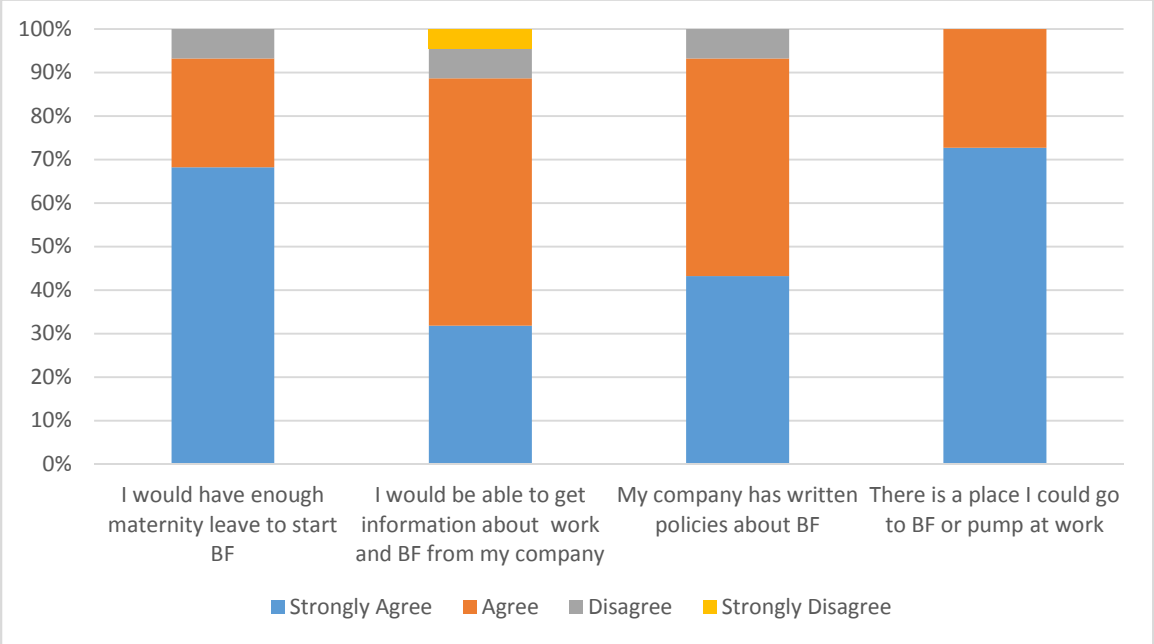


Figure 5: Mother's perceptions of organization support

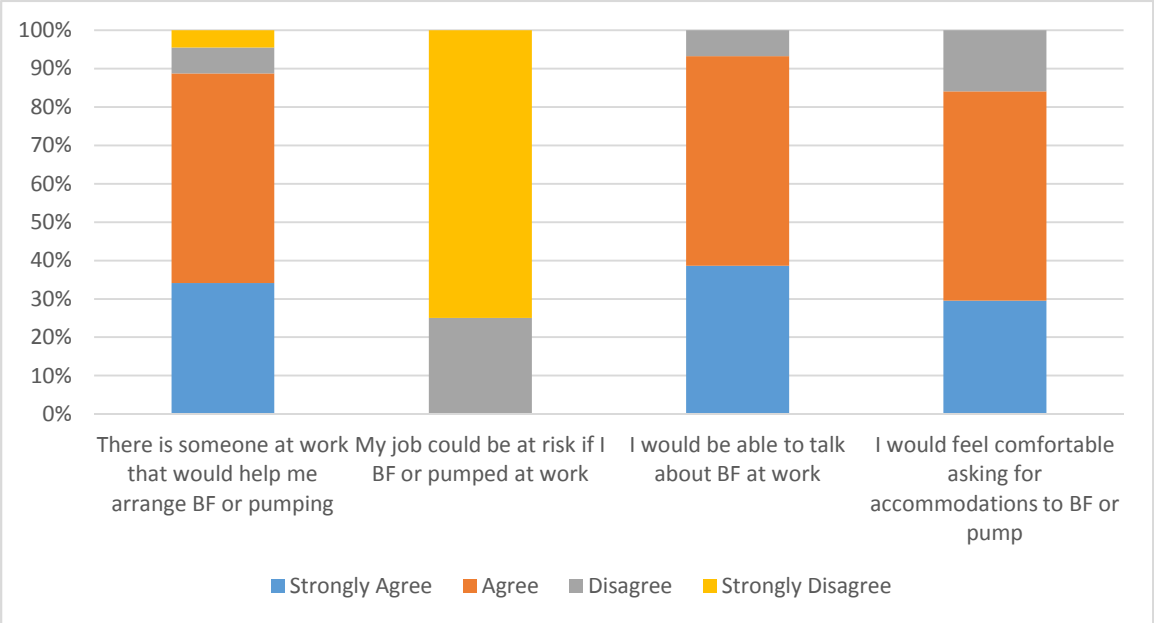


Figure 6: Mothers' perceptions of organization support, part 2

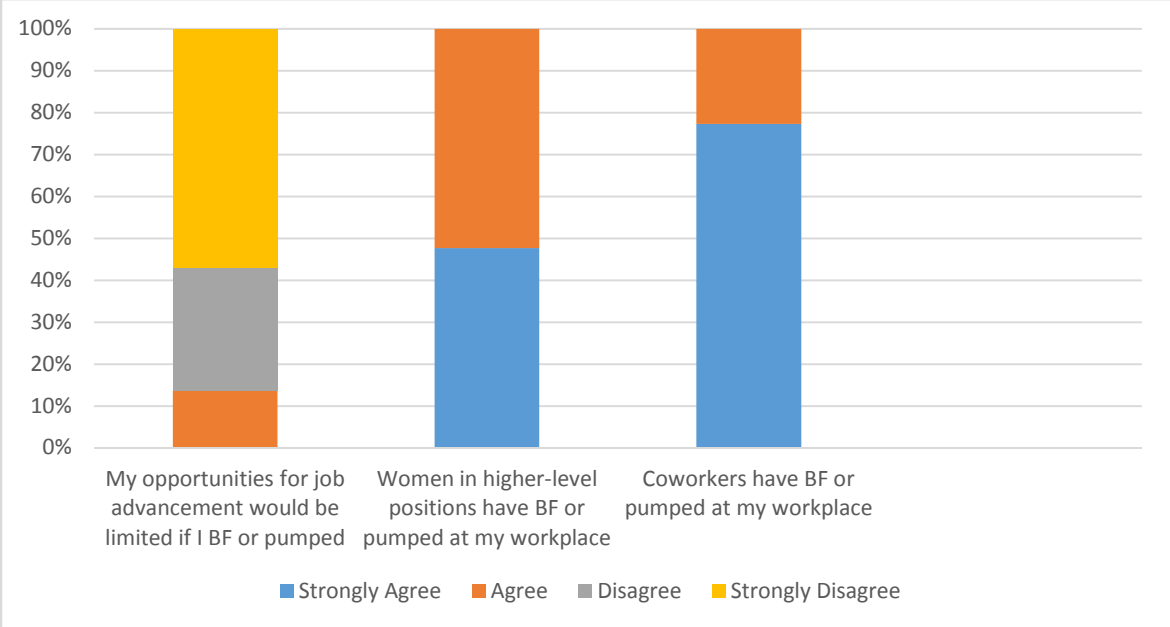


Figure 7: Mothers' perceptions of organization support, part 3

Manager support. Employee perceptions of manager support overall were positive as well as shown in Figures 8, 9, and 10.

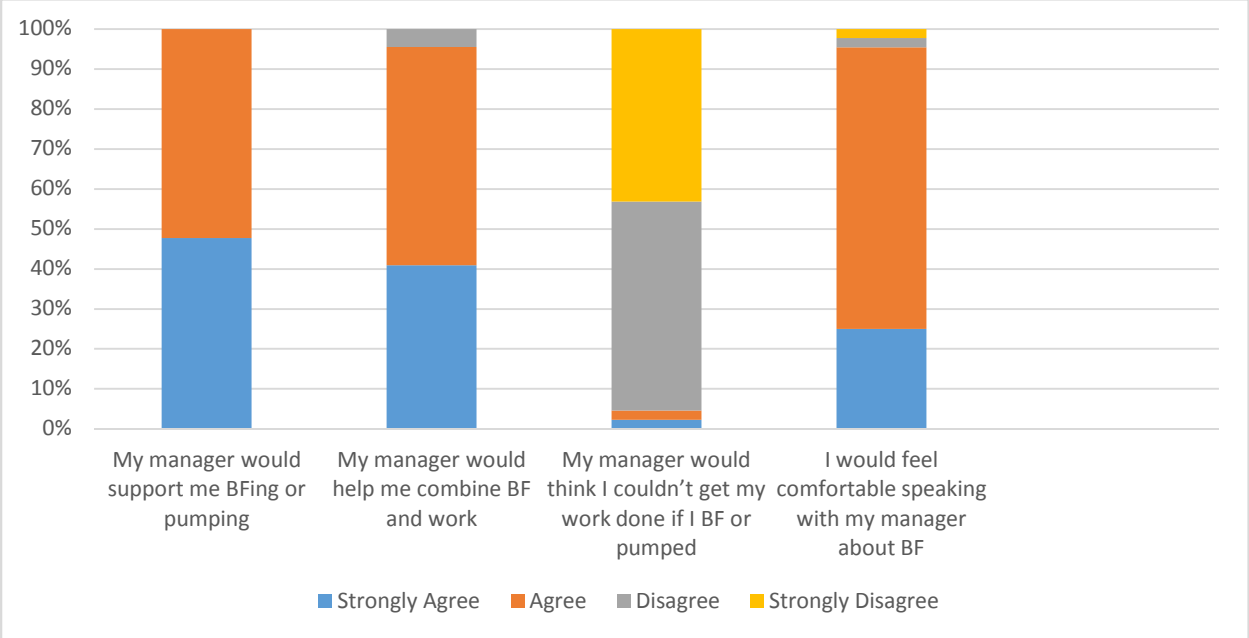


Figure 8: Mothers' perceptions of manager support

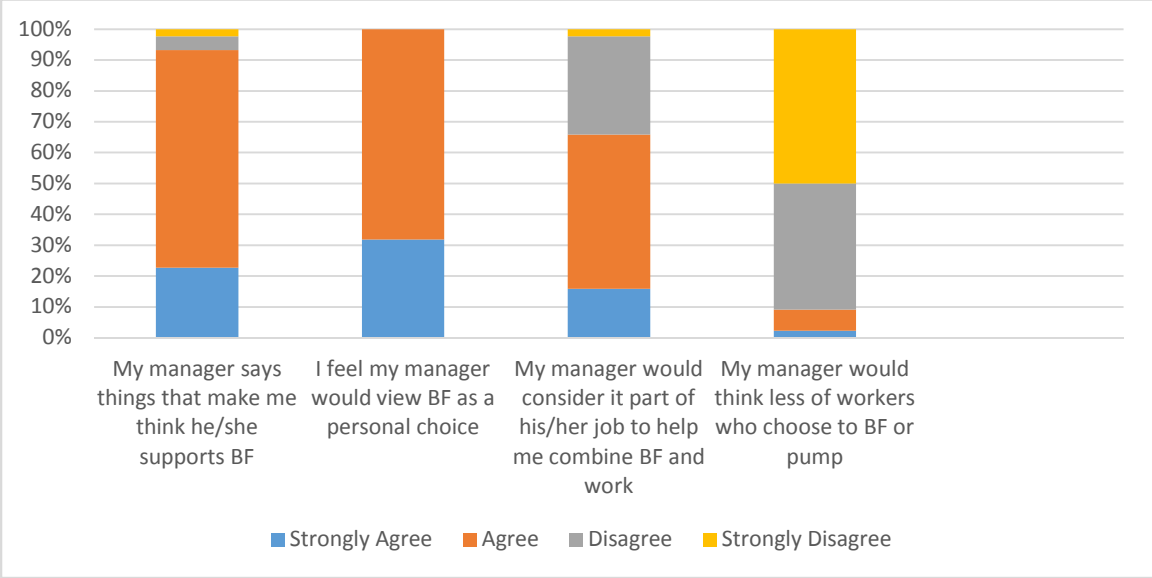


Figure 9: Mothers' perceptions of manager support, part 2

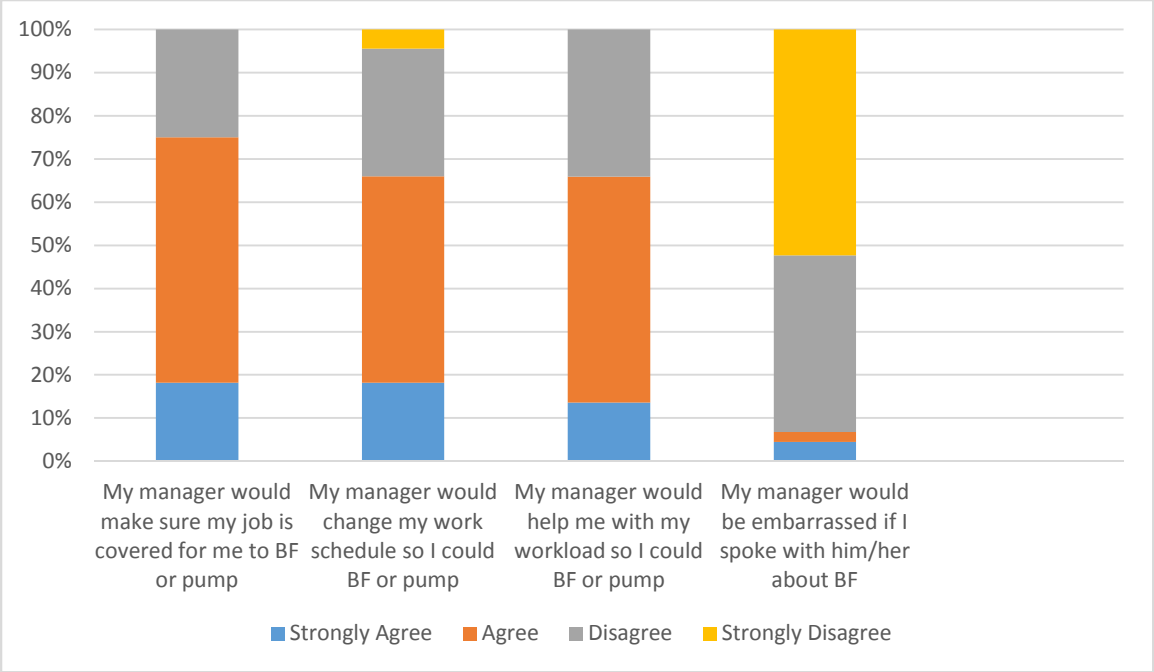


Figure 10: Mothers' perceptions of manager support, part 3

Co-worker support. Mothers' perceptions of co-worker support were also positive as shown in Figure 11.

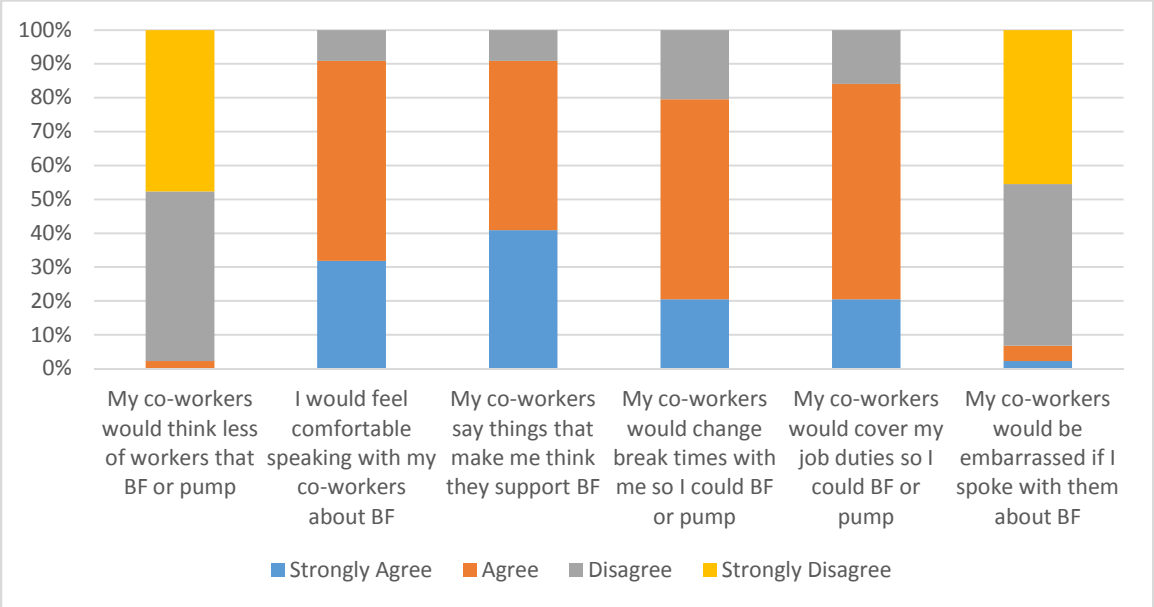


Figure 11: Mothers' perceptions of co-worker support

Time. Most mothers responded that they would have enough time to breastfeed or pump breast milk at work as shown in Figure 12.

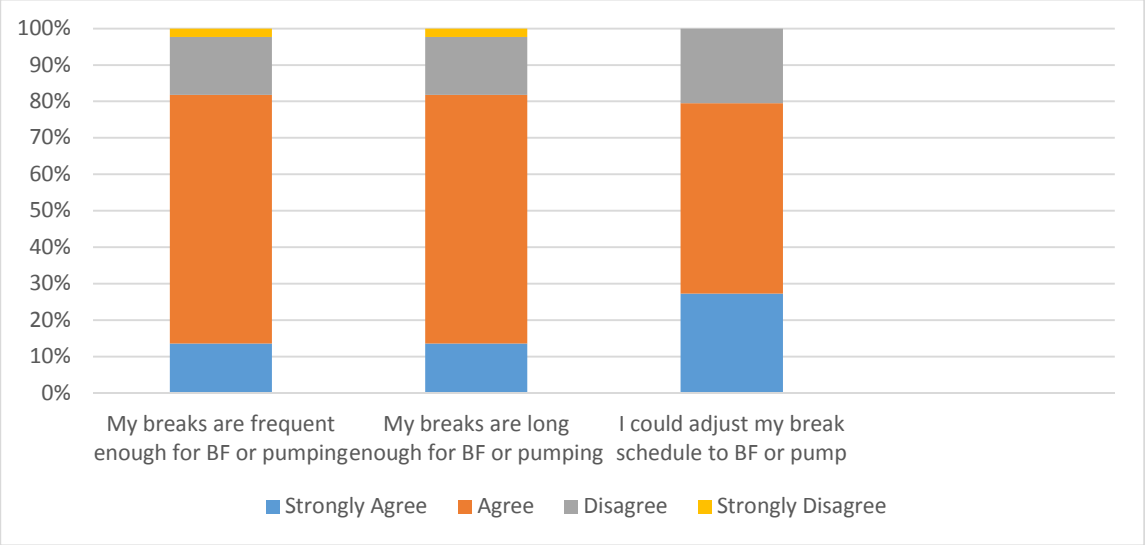


Figure 12: Mothers' perceptions of time for breastfeeding or pumping

Physical environment. When asked about the physical environment for breastfeeding or pumping breast milk at work, mothers had positive perceptions as shown in Figures 13 and 14.



Figure 13: Mothers' perceptions of physical environment

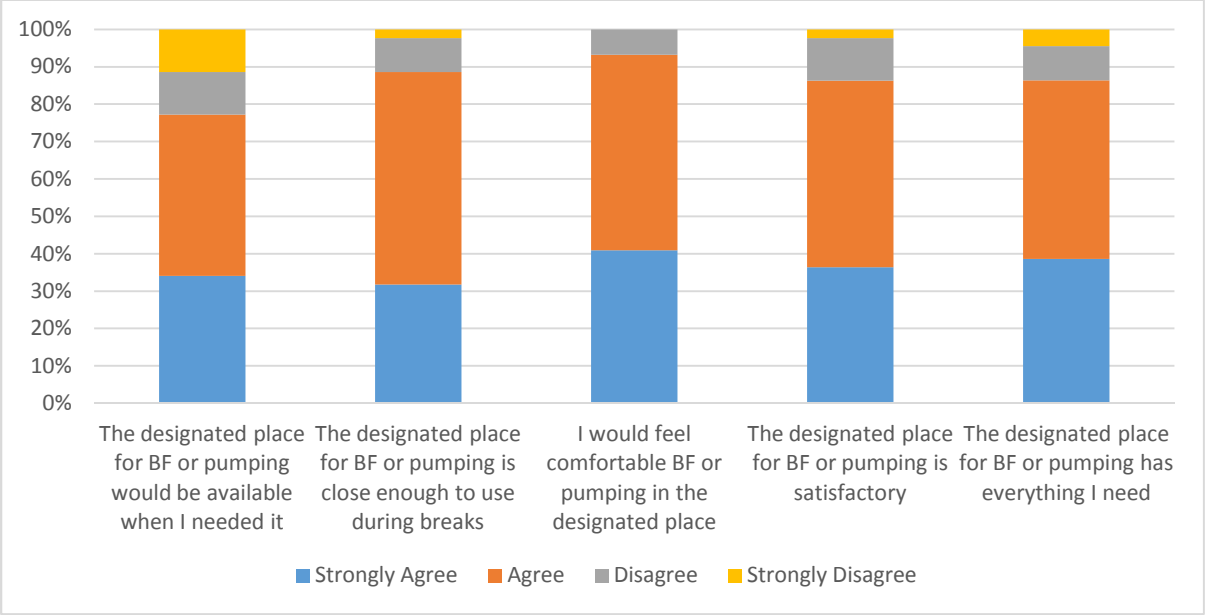


Figure 14: Mothers' perceptions of physical environment, part 2

Additional comments. Item 42 on the EPBS-Q asked participants to provide any additional comments. Two participants added comments:

> "My direct team (co-workers and manager) are very supportive of my breastfeeding and pumping needs. However the limited availability of private space and challenges with other staff using space without adhering to schedule can make finding time/space to pump a challenge."

> "I had to change my job from full-time at bedside nursing to part-time more administrative because my workplace with my daughter (age 2.5 years) was not conducive to breastfeeding. My son (16 months) went better but still not having a designated locker to lock up my supplies made me lug them all over!"

Exploratory analysis. Although not pre-specified, an ancillary analysis was conducted using a cross-tabulation of each survey item with work status (part-time vs. full-time). A chi-square test compared the proportions of the responses in the survey items between part-time employees and full-time employees. No significant differences were found between the responses of part-time employees compared to full-time employees for all items of the EPBS-Q (Appendix I).

Summary

In this setting, responses indicated that mothers' perceptions of workplace breastfeeding support were positive across all five aspects of the work environment examined. These results will be examined further in the final chapter of this paper.

Chapter 5: Discussion

Overview of Significant Findings

Mother's perceptions of workplace breastfeeding support in this setting were found to be very favorable overall. More than 80% of mothers either agreed or strongly agreed with statements about organizational support for breastfeeding, and none believed that her job could be at risk if she breastfed or pumped milk at work. Additionally, all mothers reported with certainty that other mothers, both co-workers and those in higher-level positions, had either breastfed or pumped milk at work. This reflects the hospital's commitment to supporting breastfeeding mothers by having formal policies regarding breastfeeding. Responses of mothers indicated that they were aware of these organizational policies and that they did not believe that their job would be in jeopardy if they took breaks to breastfeed or pump milk.

Managers were also viewed as being very supportive of breastfeeding in this workplace. Mothers felt that their managers would support and help them to combine breastfeeding, and that their managers wouldn't think that they couldn't get their work done if they were continuing to breastfeed. Three aspects of manager support that were viewed with mixed results were regarding whether the manager would consider it part of his/her job to help mothers combine breastfeeding and work, whether the manager would change the mothers' work schedule to allow time for breastfeeding or pumping, and whether the manager would help mothers deal with their workload to accommodate breastfeeding or pumping at work. For these three aspects, 65% of mothers reported that their managers would be supportive, but 35% thought their managers would not be as

supportive with regard to these aspects. This could be because these items require speculation on the part of the employee about what her manager's specific logistical role is when an employee is either breastfeeding or pumping milk at work.

Mothers perceived their co-workers as being very supportive of their choice to breastfeed or pump breastmilk at work. The item with the biggest difference in positive and negative perceptions was regarding whether co-workers would change break times with the mother so that she could breastfeed or pump. For this item, 20% of mothers did not think that they would. These responses reflect the comradery that is often seen amongst co-workers. The 20% of mothers who did not think that their co-workers would change break times may have felt uncomfortable asking for what could be viewed as a favor.

The time and frequency of breaks for breastfeeding or pumping were perceived as being sufficient by mothers in the study, and all knew about the availability of company-designated lactation rooms. A disparity existed between mothers who believed that the company would supply equipment for pumping and those who did not believe that the company would supply the equipment. Thirty-five percent of mothers answered that the company would supply the equipment. In fact, mothers must bring all their own equipment for pumping at this workplace. The other item where not all mothers agreed was with regard to the availability of the company-designated lactation room; 23% of mothers did not agree that it would be available when they needed it. This hospital has only one dedicated lactation room. Adding an additional lactation room may have a significant impact on employees' ability to breastfeed or pump milk during the work day.

Although this worksite had formal breastfeeding policies, a designated lactation

room, and supportive managers and co-workers, the actual process of combining breastfeeding and employment was not always an easy one. The two participants who submitted additional comments described their difficulties. One had concerns with all nursing mothers using the lactation room and not all adhering to a schedule, which made it difficult for this mother to actually pump when it was her break. The other had concerns about scheduling her job duties that required her to change from bedside nursing to a more administrative role, and also was disappointed with the lack of a secure place to store her pump at work. If more mothers had written comments, some common themes may have emerged. These themes might be especially helpful to investigate further.

Relationship to existing research studies

Because there is little research describing mothers' perceptions of workplace breastfeeding support, the results of this study cannot be directly compared to published literature. One could assume that mothers' positive perceptions of workplace breastfeeding support are aligned with actual supportive workplace practices with regards to organization support, manager support, co-worker support, time, and physical environment. These supportive workplace practices have demonstrated increased rates of breastfeeding initiation and duration among employees in many studies.

Implications for practice, education, and health policy

This study provided information that can be used by the participant hospital as part of their ongoing attention to employee satisfaction, and especially to nursing mothers. Steps toward successful achievement of the Healthy People 2020 goal of increasing the proportion of mothers who initiate breastfeeding to 81.9%, the proportion

who continue breastfeeding for six months to 60.6%, and the proportion who continue breastfeeding until one year to 34.1% when more employers provide accommodations supportive of breastfeeding in the workplace.

Additionally, health care providers can utilize the information from this study to better understand some of the factors that influence a mother's ability to meet her breastfeeding goals. Nurse Practitioners can serve as a voice for these working mothers and their infants regarding legislative support of practices to make workplaces more breastfeeding-friendly.

Conclusions

Although breastfeeding is the way that human babies are meant to be fed, there have been many obstacles that have made it difficult for mothers to achieve their breastfeeding goals. Over time, rates of breastfeeding in the US have waned due to factors that include an increasing number of mothers in the workforce, influence of healthcare providers, and free samples of infant formulas given to new mothers. Women who return to work after their babies are born are less likely to initiate breastfeeding, and are less likely to continue breastfeeding to the recommended 12 months. Providing support for breastfeeding mothers to breastfeed or pump milk during the work day is one way that makes it possible for a mother to combine work and breastfeeding. This study showed that, in the setting studied, mothers had positive perceptions of breastfeeding support in their workplace in the aspects of organizational support, managerial support, co-worker support, time, and physical environment. The results from this study can be used to help inform the participant hospital so that they can make further improvements to their policies and facilities to support employees who breastfeed.

Limitations

There are many limitations of the study that limit the generalizability of the results. Sampling was done at a one-day Employee Knowledge Fair at an urban hospital in a predominantly rural state. The intention of the investigator was to attract a wide range of participant demographics since the hospital employs individuals from a wide variety of demographics. However, although all job types had representation in the study, the sample was not representative of the total population of hospital employees. If the recruitment occurred in a setting such as an Employee Appreciation Day Picnic, the participants and their responses on the survey might have been different from what was found in this study. This study included self-selected participants. This type of participant selection tends to include individuals who are most or least satisfied with a particular situation. The individuals with more moderate views may be under-represented.

The paper survey design was another limitation of the study. At first it seemed as though a paper survey would keep things simpler than an online survey, and that it would not exclude potential participants who did not have access to a computer. In reality, the paper survey posed some problems. Logistically, it was expensive and time-consuming to print and collate six pages of the EPBS-Q, two pages of the Study Information Sheet, and one page of the Demographic Survey. Providing stamped envelopes to individuals who wished to mail in their responses was another financial and logistical consideration. Finally, data collection was done in a labor-intensive item-by-item data entry fashion. A survey conducted online may have attracted more participants, at no cost to the investigator, and data would have been already coded. A larger sample size would

provide more robust data and might allow for analysis that could be used to determine statistical significance of the findings.

Recruiting subjects without being able to provide any incentive or tangible compensation for their participation was also a limiting factor. Subjects may have been more likely to approach the investigator if an obvious incentive was presented.

These limitations in recruitment lead to limitations in data analysis due to the small number of participants. The sample was not large enough to have the power to determine if there were statistically significant differences in mothers' perceptions of workplace breastfeeding support depending on whether they worked part time or full time, or if they worked in the kitchen compared to nursing or administrative roles.

The short time frame of the study from start to finish presented another set of limitations. In order to complete all the necessary steps, the study needed to be conducted on a small scale. A more meaningful study might include a pre-test of mothers' perceptions of workplace breastfeeding support, focus groups to gather more information, an intervention addressing an aspect found in need of improvement, and a post-test after a year of implementation. Additionally, comparison of a variety of employers and/or employment settings or in different areas of the US would yield even more interesting results. The final component would be to collect data about the employees' actual breastfeeding practices, and how their perceptions of workplace breastfeeding support correlated with their actual rates of breastfeeding initiation and duration.

Because the study results are descriptive, they do not show causation of any kind. The study also does not have external validity because these results are not likely to be

generalizable to other worksites in other industries or of different sizes or in other parts of the country. The study was conducted at an urban hospital in a predominantly rural state in Northern New England with breastfeeding rates and support indicators among the highest in the US. If the study were conducted in hospitals in different areas of the US, or in different industries in the same state as this study, the results may have been very different.

Recommendations for further research

Healthy People 2020 goals as related to breastfeeding and the Surgeon General's Call to Action to Support Breastfeeding have provided the perfect environment for further research in order to determine ways to best reach these goals. Replication of this study in different industries or different parts of the country would provide insight into what parts of workplace breastfeeding support need further attention. Establishing a causal link between implementation of interventions aimed at increasing breastfeeding initiation and duration, increased positive mothers' perceptions of workplace breastfeeding support, and increased rates of breastfeeding initiation and duration would be ideal results. Further research exploring the effects of longer and paid childcare leave on the initiation and duration of breastfeeding is another aspect that could help determine what the optimal plan is for employers of different sizes and of different industries.

This study has provided an example of how one group of women perceive the support of breastfeeding in their workplace. To know the actual rates of breastfeeding initiation and duration in this group would help to better understand the relationship between positive perceptions of workplace breastfeeding support and actual rates of breastfeeding initiation and duration. Further study among different populations and in a

variety of settings might help to further the understanding of barriers and potential supports for breastfeeding mothers, resulting in changes in workplace support and policies. These changes may well forward the goals of Healthy People 2020, and come closer to actualizing the Surgeon General's Call to Action to break down existing barriers and increase the numbers of women who continue to breastfeed their infants when they return to work.

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Appendix A

US Breastfeeding Rates by Socio-Demographic Factors, 2007

Provisional Breastfeeding Rates by Socio-demographic Factors, Among Children Born in 2007 (% +/- half 95% Confidence Interval)

Socio-demographic Factors	n	Ever Breastfeeding	Breastfeeding[1] at 6 Months	Breastfeeding[1] at 12 Months
US National	16629	75.0±1.2	43.0±1.3	22.4±1.1
		Sex		
Male	8538	75.4±1.6	42.6±1.8	22.0±1.5
Female	8091	74.6±1.7	43.5±1.9	22.8±1.7
		Race/ethnicity		
American Indian or Alaska Native	552	73.8±6.9	42.4±8.8	20.7±7.0
Asian or Pacific Islander	1077	83.0±5.2	56.4±6.3	32.8±6.5
-Asian	886	86.4±5.7	58.6±7.1	34.8±7.5
-Native Hawaiian and other	239	72.4±11.1	45.3±12.1	23.9±10.8
Black or African American	2606	59.7±2.9	27.9±2.5	12.9±1.9
White	13425	77.7±1.2	45.1±1.5	23.6±1.3
Hispanic or Latino	2895	80.6±2.4	46.0±3.1	24.7±2.8
Not Hispanic or Latino (NH)	13734	72.8±1.3	41.9±1.4	21.5±1.2
-NH Black or African American	2309	58.1±3.1	27.5±2.7	12.5±1.9
-NH White	10937	76.2±1.4	44.7±1.5	23.3±1.3
		Birth Order		
First Born	8834	74.5±1.6	44.1±1.8	23.7±1.6
Not First Born	7795	75.6±1.6	41.8±1.9	20.8±1.7
		Receiving WIC[2]		
Yes	6814	67.5±1.8	33.7±2.0	17.5±1.7
No, but eligible	939	77.5±4.7	48.2±5.7	30.7±5.4
Ineligible	8143	84.6±1.4	54.2±1.9	27.6±1.6

Maternal Age, Years				
<20	360	59.7±7.9	22.2±7.5	10.7±5.7
20-29	5449	69.7±2.1	33.4±2.1	16.1±1.7
>=30	10820	79.3±1.4	50.5±1.7	27.1±1.6
Maternal Education				
Not a High School Graduate	1808	67.0±3.4	37.0±3.8	21.9±3.5
High School Graduate	3056	66.1±2.5	31.4±2.5	15.1±2.0
Some College	4290	76.5±2.1	41.0±2.5	20.5±2.2
College Graduate	7475	88.3±1.1	59.9±1.8	31.1±1.7
Maternal Marital Status				
Married	12444	81.7±1.3	51.6±1.6	27.5±1.5
Unmarried[3]	4185	61.3±2.4	25.5±2.3	11.9±1.8
Residence				
MSA[4], Central City	7163	75.5±1.8	43.9±2.1	24.4±2.0
MSA, Non-Central City	6004	77.9±1.7	45.3±2.1	22.3±1.8
Non-MSA	3462	66.4±2.9	35.0±2.6	17.4±2.0
Poverty Income Ratio[5],%				
<100%	3196	67.0±2.7	34.7±3.0	19.0±2.7
100%-184%	2520	71.2±2.8	36.9±3.0	18.9±2.4
185%-349%	3745	77.7±2.4	45.0±2.7	23.9±2.2
≥350%	5755	84.4±1.7	54.0±2.2	26.7±2.0

[1]Breastfeeding with or without the addition of complementary liquids or solids
[2]WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.
[3]Unmarried includes never married, widowed, separated, divorced.
[4]MSA = Metropolitan Statistical Area defined by the Census Bureau.
[5]Poverty Income Ratio = Ratio of self-reported family income to the federal poverty threshold value depending on the number of people in the household.

Source: National Immunization Survey, Centers for Disease Control and Prevention, Department of Health and Human Services

Sample sizes appearing in the NIS breastfeeding tables are slightly smaller than the numbers published in other NIS publications due to the fact that in the DNPAO breastfeeding analyses, the sample was limited to records with valid responses to the breastfeeding questions.

Appendix B

CDC Breastfeeding Report Card, 2011

Breastfeeding Rates[1]

State	Ever Breastfed	Breastfeeding at 6 months	Breastfeeding at 12 months	Exclusive breastfeeding at 3 months	Exclusive breastfeeding at 6 months
U.S. National	79.2	49.4	26.7	40.7	18.8
Alabama	67.3	32.1	11.8	26.6	13.2
Alaska	87.3	64.3	42.5	51.6	27.6
Arizona	81.6	47.8	23.9	37.5	18.0
Arkansas	67.1	32.3	13.5	29.1	10.3
California	92.8	63.1	38.4	56.1	25.4
Colorado	81.0	55.2	29.3	50.3	25.8
Connecticut	83.3	51.4	27.5	36.9	19.2
Delaware	65.7	34.4	16.8	31.7	13.2
Dist of Columbia	77.6	53.1	30.0	37.6	17.3
Florida	77.0	48.7	26.9	38.9	18.3
Georgia	70.3	40.1	20.7	27.2	14.5
Hawaii	89.5	61.5	36.5	48.5	26.4
Idaho	84.4	56.8	30.5	40.2	24.8
Illinois	77.4	47.0	26.1	38.1	18.2
Indiana	74.1	38.6	21.5	35.7	18.1
Iowa	82.1	51.6	28.9	41.2	20.1
Kansas	77.4	40.3	22.5	37.4	11.4
Kentucky	61.3	31.5	22.8	28.9	14.2
Louisiana	56.9	30.3	12.6	25.3	13.4
Maine	81.7	50.5	29.2	48.6	24.7
Maryland	79.8	60.1	29.4	43.6	23.1
Massachusetts	81.4	53.7	24.9	36.8	17.5
Michigan	75.3	46.6	23.3	40.5	16.2
Minnesota	89.2	59.2	34.6	48.5	23.5
Mississippi	61.5	28.9	10.0	28.8	10.1
Missouri	67.9	42.1	20.2	32.5	14.1
Montana	91.2	50.7	25.5	53.4	19.3
Nebraska	82.4	46.1	25.8	46.5	20.2
Nevada	80.9	45.3	22.7	43.9	18.0
New Hampshire	86.4	57.6	32.9	51.7	27.0
New Jersey	81.6	56.2	30.9	39.6	22.3
New Mexico	76.9	45.9	28.3	43.1	16.1
New York	80.5	55.8	31.3	37.1	16.9
North Carolina	77.2	48.3	24.5	42.6	20.7
North Dakota	82.4	55.4	26.5	53.9	22.5
Ohio	70.1	42.1	21.6	35.5	15.0
Oklahoma	71.2	38.4	22.6	35.5	15.5
Oregon	91.9	64.4	40.2	52.1	25.8
Pennsylvania	72.9	45.7	26.1	34.0	15.3
Rhode Island	79.7	47.0	22.2	42.8	19.3
South Carolina	73.4	37.4	14.0	32.0	13.4
South Dakota	77.7	45.6	18.3	42.0	15.9
Tennessee	74.9	40.7	20.9	39.1	15.4
Texas	78.4	42.9	20.9	38.9	16.8
Utah	89.6	63.1	40.7	53.2	20.0
Vermont	90.0	66.5	45.3	60.5	29.6
Virginia	80.5	53.7	27.4	38.3	22.9
Washington	91.8	64.2	35.3	46.8	20.3
West Virginia	59.3	29.3	15.9	28.3	12.2
Wisconsin	83.5	54.9	26.2	48.0	21.4
Wyoming	87.6	56.6	30.0	43.6	16.2

Source: Centers for Disease Control and Prevention National Immunization Survey (NIS), 2011 births.

The 2011 rates are based on the landline and cellular telephone samples in NIS, referred to as the dual-frame sample.

[1]This is the first year CDC is releasing breastfeeding rates based on the dual-frame sample. For a description of the impact on breastfeeding rates when NIS added a cellular telephone sample of respondents, see http://www.cdc.gov/breastfeeding/data/nis_data/survey_methods.htm

Breastfeeding Support Indicators

State	Average mPINC Score	Percent of live births occurring at Baby-Friendly Facilities	Percent of breastfed infants receiving formula before 2 days of age	Number of La Leche League Leaders per 1,000 live births	Number of CLCs* per 1,000 live births	Number of IBCLCs* per 1,000 live births	State's child care regulation supports onsite breastfeeding
U.S. National	**75**	**7.79**	**19.4**	**0.90**	**3.84**	**3.48**	**7**
Alabama	67	2.50	27.0	0.62	1.49	2.38	No
Alaska	82	21.79	11.9	1.23	4.90	6.83	No
Arizona	75	1.65	26.6	1.01	1.11	3.33	Yes
Arkansas	62	0	16.5	0.44	0.70	2.11	No
California	83	26.97	12.7	0.66	1.18	4.06	Yes
Colorado	79	8.60	10.6	1.38	8.00	4.19	No
Connecticut	82	28.56	25.6	2.30	9.20	5.24	No
Delaware	86	8.41	18.2	0.36	0.55	4.36	Yes
Dist of Columbia	80	11.81	24.4	0.75	1.50	1.50	No
Florida	78	2.57	23.0	0.87	6.03	2.45	No
Georgia	69	0	27.1	0.64	6.69	2.50	No
Hawaii	80	8.94	19.6	0.53	6.26	4.58	No
Idaho	76	7.26	14.1	0.94	3.84	3.48	No
Illinois	77	2.55	24.7	0.80	6.76	3.03	No
Indiana	76	12.01	17.2	0.95	2.77	4.71	No
Iowa	69	0.14	23.6	0.69	3.74	2.74	No
Kansas	70	0	17.7	1.91	0.51	3.76	No
Kentucky	70	5.85	10.3	0.36	6.38	2.80	No
Louisiana	71	0	12.4	0.54	1.08	2.31	No
Maine	82	27.56	16.7	1.79	22.14	6.08	No
Maryland	76	6.77	23.3	0.92	1.07	4.55	No
Massachusetts	84	7.12	20.1	1.43	9.30	5.42	No
Michigan	73	0.50	15.5	1.35	2.07	2.79	No
Minnesota	77	8.23	15.9	0.87	7.88	4.58	No
Mississippi	59	0	15.1	1.14	0.57	1.81	Yes
Missouri	71	0.82	22.7	1.35	2.02	3.61	No
Montana	80	0.25	9.4	1.95	25.54	4.13	No
Nebraska	68	7.49	13.9	1.42	11.80	3.91	No
Nevada	71	5.20	22.5	0.74	4.14	1.66	No
New Hampshire	91	35.98	10.5	2.01	12.17	7.33	No
New Jersey	78	5.96	28.4	1.46	2.49	3.42	No
New Mexico	77	3.77	15.5	0.87	1.75	3.30	No
New York	80	5.72	28.8	0.74	10.65	3.32	No
North Carolina	75	9.75	14.3	1.29	0.96	4.91	Yes
North Dakota	75	2.01	8.2	0.66	9.05	2.26	No
Ohio	76	10.31	19.9	0.98	5.16	3.67	No
Oklahoma	71	0.40	15.3	0.39	1.33	3.24	No
Oregon	85	9.21	13.5	1.33	0.42	7.58	No
Pennsylvania	74	0.08	22.2	1.15	2.40	2.97	No
Rhode Island	86	10.53	20.2	0.56	14.53	5.64	No
South Carolina	78	9.25	22.6	0.59	2.76	2.73	No
South Dakota	70	3.91	8.8	0.16	2.52	2.52	No
Tennessee	67	0.13	14.6	0.58	4.13	2.21	No
Texas	73	3.35	22.3	0.48	0.99	2.32	Yes
Utah	72	6.43	19.2	0.67	0.31	2.08	No
Vermont	88	3.21	8.5	3.01	18.74	13.55	Yes
Virginia	76	0.52	18.3	1.40	0.83	4.33	No
Washington	82	11.18	18.9	1.19	0.31	5.65	No
West Virginia	69	0	12.9	0.53	3.21	3.01	No
Wisconsin	79	12.43	15.5	1.19	7.64	4.07	No
Wyoming	71	2.85	14.8	2.23	21.15	2.76	No

* CLC – Certified Lactation Counselor; IBCLC – International Board Certified Lactation Consultant.

Appendix C

Employee Perceptions of Breastfeeding Support Questionnaire (EPBS-Q)

BESt: Breastfeeding and Employment Study

EMPLOYEE SURVEY

Instructions:

1. Provide one response per statement unless otherwise specified.
2. Use a pen and check the appropriate boxes to complete this questionnaire. (e.g. ☒)
3. For each of the following statements, breastfeeding includes breastfeeding a baby and/or using a breast pump.
4. Answer each statement as it most applies to you, whether you are pregnant or had a baby in last two years.
5. Please fill in the box under the option that most closely describes how you feel about each statement.

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Organization Support

This section asks about the overall support you feel would be provided by your company if you wanted to combine breastfeeding and work.

	Strongly agree	Agree	Disagree	Strongly disagree
1. I would have enough maternity leave (paid and/or unpaid time off) to get breastfeeding started before going back to work.	☐	☐	☐	☐
2. I would be able to get information about combining work and breastfeeding from my company.	☐	☐	☐	☐
3. I'm certain my company has written policies for employees that are breastfeeding or pumping breast milk.	☐	☐	☐	☐
4. I'm certain there is a place I could go to breastfeed or pump breast milk at work.	☐	☐	☐	☐
5. There is someone I could go to at work that would help me make arrangements for breastfeeding or pumping breast milk.	☐	☐	☐	☐
6. My job could be at risk (e.g. lose my job or get fewer scheduled hours) if I breastfed or pumped breast milk at work.	☐	☐	☐	☐
7. I would be able to talk about breastfeeding at work.	☐	☐	☐	☐
8. I would feel comfortable asking for accommodations to help me breastfeed or pump breast milk at work.	☐	☐	☐	☐
9. My opportunities for job advancement would be limited if I breastfed or pumped breast milk at work.	☐	☐	☐	☐
10. I'm certain that women in higher-level positions have breastfed or pumped breast milk at my workplace.	☐	☐	☐	☐
11. I'm certain coworkers have breastfed or pumped breast milk at my workplace.	☐	☐	☐	☐

Manager Support

This section asks about the overall support you feel would be provided by your direct manager/supervisor if you wanted to combine breastfeeding and work.

	Strongly agree	Agree	Disagree	Strongly disagree
12. My manager would support me breastfeeding or pumping breast milk at work.	☐	☐	☐	☐
13. My manager would help me combine breastfeeding and work.	☐	☐	☐	☐
14. My manager would think I couldn't get all my work done if I needed to take breaks for breastfeeding or pumping breast milk.	☐	☐	☐	☐
15. I would feel comfortable speaking with my manager about breastfeeding.	☐	☐	☐	☐
16. My manager says things that make me think he/she supports breastfeeding.	☐	☐	☐	☐
17. I feel my manager would view breastfeeding as an employee's personal choice.	☐	☐	☐	☐
18. My manager would consider it part of his/her job to help me combine breastfeeding and work.	☐	☐	☐	☐
19. My manager would think less of workers who choose to breastfeed or pump breast milk at work.	☐	☐	☐	☐
20. My manager would make sure my job is covered if I needed time for breastfeeding or pumping breast milk.	☐	☐	☐	☐
21. My manager would change my work schedule to allow me time for breastfeeding or pumping breast milk.	☐	☐	☐	☐
22. My manager would help me deal with my workload so I could breastfeed or pump breast milk at work.	☐	☐	☐	☐
23. My manager would be embarrassed if I spoke with him/her about breastfeeding.	☐	☐	☐	☐

Co-worker Support

This section asks about the overall support you feel would be provided by your coworkers if you wanted to combine breastfeeding and work.

	Strongly agree	Agree	Disagree	Strongly disagree
24. My coworkers would think less of workers that choose to breastfeed or pump breast milk at work.	☐	☐	☐	☐
25. I would feel comfortable speaking with my coworkers about breastfeeding.	☐	☐	☐	☐
26. My coworkers say things that make me think they support breastfeeding.	☐	☐	☐	☐
27. My coworkers would change their break times with me so that I could breastfeed or pump breast milk.	☐	☐	☐	☐
28. My coworkers would cover my job duties if I needed time for breastfeeding or pumping breast milk.	☐	☐	☐	☐
29. My coworkers would be embarrassed if I spoke with them about breastfeeding.	☐	☐	☐	☐

Time

This section asks about the pace of your job and available time you would have during your workday to breastfeed or pump breast milk.

	Strongly agree	Agree	Disagree	Strongly disagree
30. My breaks are frequent enough for breastfeeding or pumping breast milk.	☐	☐	☐	☐
31. My breaks are long enough for breastfeeding or pumping breast milk.	☐	☐	☐	☐
32. I could adjust my break schedule in order to breastfeed or pump breast milk.	☐	☐	☐	☐

Physical Environment

This section asks about the physical environment of your workplace for breastfeeding or pumping breast milk after returning to work.

33. I could buy or borrow the equipment I would need for pumping breast milk.
    - ☐ No
    - ☐ Yes

34. My company would supply the equipment I would need for pumping breast milk at work.
    - ☐ No
    - ☐ Yes

35. I could find a place to store expressed breast milk at work.
    - ☐ No
    - ☐ Yes

36. There is a company-designated place for women to breastfeed or pump milk during the workday.
    - ☐ No **(IF NO, please skip to #42 on the next page)**
    - ☐ Yes **(IF YES, please continue to #37)**

	Strongly agree	Agree	Disagree	Strongly disagree
37. The designated place for breastfeeding or pumping breast milk at work would be available when I needed it.	☐	☐	☐	☐
38. The designated place for breastfeeding or pumping breast milk is close enough to my work area to use during my breaks.	☐	☐	☐	☐
39. I would feel comfortable breastfeeding or pumping breast milk in the designated place.	☐	☐	☐	☐
40. The designated place for breastfeeding or pumping breast milk is satisfactory.	☐	☐	☐	☐
41. The designated place for breastfeeding or pumping breast milk includes everything I need.	☐	☐	☐	☐

Thank you for your time completing this survey. Please provide any other comments you may have.

Appendix D

Demographics of Study Participants

	Number	**%**
Employee Status		
Part Time	19	43.2
Full Time	25	56.8
Worksite		
Main Campus Inpatient	32	72.7
Main Campus Outpatient	12	27.3
Work Type		
Admin/Clerical	10	22.7
Allied Health	4	9.1
Management	4	9.1
Nursing	18	40.9
Other Professional	2	4.5
Physician/ NP/PA	4	9.1
Service/Maintenance	2	4.5
Age		
18-25	3	6.8
26-33	27	61.4
34-41	13	29.5
42 or older	1	2.3
Total	44	100

Appendix E

Permission the from Authors to Use the Instrument EPBS-Q

Subject: instrument
Date: 01/20/2014 (01:31:52 PM EDT)
From: Beth Olson
To: kmburks@uvm.edu
Cc: bholson@wisc.edu
1 Attachment

Katrina-I've moved to UW-Madison; my contact information is below. Attached is the employee's instrument. As this was the work of one of my grad students, all we request is credit is given to the source (if anything published, reference the Greene et all papers.) Best wishes; I'd appreciate knowing any outcome or results.

Best wishes,

Beth

Beth H. Olson, PhD

Associate Professor & Extension Specialist

University of Wisconsin-Madison

1415 Linden Ave.

273 Nutritional Sciences

Madison, WI 53706

(p) 608-265-2108

(f) 608-262-5860

bholson@wisc.edu

Appendix F

Study Information Sheet

Information Sheet

Title of Research Project: Mothers' Perceptions of Workplace Breastfeeding Support

Principal Investigator: Katrina Burks, RN

Faculty Sponsor: Carol Buck-Rolland, EdD, APRN

Sponsor: University of Vermont, Department of Nursing

You are being invited to take part in this research study because you are an employee of Fletcher Allen Health Care and have had a baby in the past two years. This study is being conducted by Katrina Burks, RN for a Thesis as part of the requirements for the Master's in Nursing degree at the University of Vermont.

We encourage you to ask questions and take the opportunity to discuss the study with anybody you think can help you make this decision.

Why is This Research Study Being Conducted?

The purpose of this study is to find out what mothers think about the support for breastfeeding at their workplace.

How Many People Will Take Part In The Study?

Up to 100 women old will take part in this study.

What Is Involved In The Study?

You are being asked to complete two brief questionnaires that include questions such as your age range and where you work, as well as questions about your views about how supportive the people you work with are about breastfeeding, and your views about the time and physical space needed to breastfeed or pump milk at work.

This should take approximately 5 minutes. Your responses will be held confidential. Once completed you can place your questionnaires in the designated box marked "Completed Questionnaires." If you would rather complete the questionnaires later, please ask the investigator for a stamped envelope to return the completed questionnaires to the investigator by mail.

What Are The Risks Of The Study?

There is always the potential risk for an accidental breach of confidentiality. Professional measures will be taken to ensure your responses are kept secure.

What Are The Benefits of Participating In The Study?
There may be no direct benefit to you for your participation. However, others may benefit by this or other organizations making changes in the work environment to be more supportive of breastfeeding.

What Other Options Are There?
The only other option is not to participate.

Are There Any Costs?
There is no cost to you other than your time.

What Is the Compensation?
You will not be compensated for your participation in this study.

Can You Withdraw From This Study?
You may discontinue your participation in this study at any time before submitting your survey.

What About Confidentiality?
All research information will be kept in a confidential form at the locked filing cabinet in Duxbury, VT. The security of your information will be maintained by Katrina Burks. The results of this study may eventually be published, but your confidentiality will be maintained. Your name will not appear in any publication.

Contact Information
You may contact Katrina Burks, the Investigator in charge of this study, at 802-318-8869 for more information about this study. If you have any questions about your rights as a participant in a research project you should contact Nancy Stalnaker, the Director of the Research Protections Office, at the University of Vermont at 802-656-5040.

Participation:
You have read a summary of this research study. Should you have any further questions about the research, you may contact the person conducting the study at the address and telephone number given below. Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or prejudice.
If you agree to take part in this study, your consent will be implied upon the completion of the survey.

Name of Principal Investigator: Katrina Burks
Address: 1230 Scrabble Hill, Duxbury, VT 05676
Telephone Number: 802-318-8869

Name of Faculty Sponsor: Carol Buck-Rolland
Address: Department of Nursing, 230 Rowell, 106 Carrigan Dr., Burlington, VT 05405
Telephone Number: 802-656-2253

Appendix G

Breastfeeding and Employment Study Demographics Survey

Breastfeeding and Employment Study Demographics

Please answer the following questions:

1. Are you a Fletcher Allen Health Care employee?
   - Yes
   - No

2. Do you work Part Time or Full Time?
   - Part Time
   - Full Time

3. Where do you work most of the time?
   - Fletcher Allen Main Campus Inpatient
   - Fletcher Allen Main Campus Outpatient
   - Another Fletcher Allen site

4. What category best describes your work with Fletcher Allen Health Care?
   - Administrative/Clerical
   - Allied Health
   - Management
   - Nursing
   - Other Professional
   - Physician/ Nurse Practitioner/ Physician Assistant
   - Service and Maintenance

5. Which of the following age category describes you?
   - 17 or younger
   - 18-25
   - 26-33
   - 34-40
   - 41 or older

6. How old is your youngest child?
   - Under age 2
   - Age 2 or older

Appendix H

Frequency Tables

Frequencies

I would have enough maternity leave (paid and/or unpaid time off) to get breastfeeding started before going back to work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	30	68.2	68.2	68.2
	Agree	11	25.0	25.0	93.2
	Disagree	3	6.8	6.8	100.0
	Total	44	100.0	100.0	

I would be able to get information about combining work and breastfeeding from my company.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	31.8	31.8	31.8
	Agree	25	56.8	56.8	88.6
	Disagree	3	6.8	6.8	95.5
	Strongly Disagree	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

I'm certain my company has written policies for employees that are breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	19	43.2	43.2	43.2
	Agree	22	50.0	50.0	93.2
	Disagree	3	6.8	6.8	100.0
	Total	44	100.0	100.0	

I'm certain there is a place I could go to breastfeed or pump breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	32	72.7	72.7	72.7
	Agree	12	27.3	27.3	100.0
	Total	44	100.0	100.0	

There is someone I could go to at work that would help me make arrangements for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	15	34.1	34.1	34.1
	Agree	24	54.5	54.5	88.6
	Disagree	3	6.8	6.8	95.5
	Strongly Disagree	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

My job could be at risk (e.g. lose my job or get fewer scheduled hours) if I breastfed or pumped breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	11	25.0	25.0	25.0
	Strongly Disagree	33	75.0	75.0	100.0
	Total	44	100.0	100.0	

I would be able to talk about breastfeeding at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	17	38.6	38.6	38.6
	Agree	24	54.5	54.5	93.2
	Disagree	3	6.8	6.8	100.0
	Total	44	100.0	100.0	

I would feel comfortable asking for accommodations to help me breastfeed or pump breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	13	29.5	29.5	29.5
	Agree	24	54.5	54.5	84.1
	Disagree	7	15.9	15.9	100.0
	Total	44	100.0	100.0	

My opportunities for job advancement would be limited if I breastfed or pumped breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	6	13.6	13.6	13.6
	Disagree	13	29.5	29.5	43.2
	Strongly Disagree	25	56.8	56.8	100.0
	Total	44	100.0	100.0	

I'm certain that women in higher-level positions have breastfed or pumped breast milk at my workplace.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	21	47.7	47.7	47.7
	Agree	23	52.3	52.3	100.0
	Total	44	100.0	100.0	

I'm certain co-workers have breastfed or pumped breast milk at my workplace.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	34	77.3	77.3	77.3
	Agree	10	22.7	22.7	100.0
	Total	44	100.0	100.0	

My manager would support me breastfeeding or pumping breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	21	47.7	47.7	47.7
	Agree	23	52.3	52.3	100.0
	Total	44	100.0	100.0	

My manager would help me combine breastfeeding and work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	18	40.9	40.9	40.9
	Agree	24	54.5	54.5	95.5
	Disagree	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

My manager would think I couldn't get all my work done if I needed to take breaks for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	2.3	2.3	2.3
	Agree	1	2.3	2.3	4.5
	Disagree	23	52.3	52.3	56.8
	Strongly Disagree	19	43.2	43.2	100.0
	Total	44	100.0	100.0	

I would feel comfortable speaking with my manager about breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	11	25.0	25.0	25.0
	Agree	31	70.5	70.5	95.5
	Disagree	1	2.3	2.3	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

My manager says things that make me think he/she supports breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	22.7	22.7	22.7
	Agree	31	70.5	70.5	93.2
	Disagree	2	4.5	4.5	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

I feel my manager would view breastfeeding as an employee's personal choice.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	31.8	31.8	31.8
	Agree	30	68.2	68.2	100.0
	Total	44	100.0	100.0	

My manager would consider it part of his/her job to help me combine breastfeeding and work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	7	15.9	15.9	15.9
	Agree	22	50.0	50.0	65.9
	Disagree	14	31.8	31.8	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

My manager would think less of workers who choose to breastfeed or pump breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	2.3	2.3	2.3
	Agree	3	6.8	6.8	9.1
	Disagree	18	40.9	40.9	50.0
	Strongly Disagree	22	50.0	50.0	100.0
	Total	44	100.0	100.0	

My manager would make sure my job is covered if I needed time for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	8	18.2	18.2	18.2
	Agree	25	56.8	56.8	75.0
	Disagree	11	25.0	25.0	100.0
	Total	44	100.0	100.0	

My manager would change my work schedule to allow me time for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	8	18.2	18.2	18.2
	Agree	21	47.7	47.7	65.9
	Disagree	13	29.5	29.5	95.5
	Strongly Disagree	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

My manager would help me deal with my workload so I could breastfeed or pump breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	13.6	13.6	13.6
	Agree	23	52.3	52.3	65.9
	Disagree	15	34.1	34.1	100.0
	Total	44	100.0	100.0	

My manager would be embarrassed if I spoke with him/her about breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	4.5	4.5	4.5
	Agree	1	2.3	2.3	6.8
	Disagree	18	40.9	40.9	47.7
	Strongly Disagree	23	52.3	52.3	100.0
	Total	44	100.0	100.0	

My co-workers would think less of workers that choose to breastfeed or pump breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	1	2.3	2.3	2.3
	Disagree	22	50.0	50.0	52.3
	Strongly Disagree	21	47.7	47.7	100.0
	Total	44	100.0	100.0	

I would feel comfortable speaking with my co-workers about breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	31.8	31.8	31.8
	Agree	26	59.1	59.1	90.9
	Disagree	4	9.1	9.1	100.0
	Total	44	100.0	100.0	

My co-workers say things that make me think they support breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	18	40.9	40.9	40.9
	Agree	22	50.0	50.0	90.9
	Disagree	4	9.1	9.1	100.0
	Total	44	100.0	100.0	

My co-workers would change their break times with me so that I could breastfeed or pump breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	9	20.5	20.5	20.5
	Agree	26	59.1	59.1	79.5
	Disagree	9	20.5	20.5	100.0
	Total	44	100.0	100.0	

My co-workers would cover my job duties if I needed time for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	9	20.5	20.5	20.5
	Agree	28	63.6	63.6	84.1
	Disagree	7	15.9	15.9	100.0
	Total	44	100.0	100.0	

My co-workers would be embarrassed if I spoke with them about breastfeeding.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	2.3	2.3	2.3
	Agree	2	4.5	4.5	6.8
	Disagree	21	47.7	47.7	54.5
	Strongly Disagree	20	45.5	45.5	100.0
	Total	44	100.0	100.0	

My breaks are frequent enough for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	4	9.1	9.1	9.1
	Agree	31	70.5	70.5	79.5
	Disagree	9	20.5	20.5	100.0
	Total	44	100.0	100.0	

My breaks are long enough for breastfeeding or pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	13.6	13.6	13.6
	Agree	30	68.2	68.2	81.8
	Disagree	7	15.9	15.9	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

I could adjust my break schedule in order to breastfeed or pump breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	12	27.3	27.3	27.3
	Agree	23	52.3	52.3	79.5
	Disagree	9	20.5	20.5	100.0
	Total	44	100.0	100.0	

I could buy or borrow the equipment I would need for pumping breast milk.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	2.3	2.3	2.3
	Yes	43	97.7	97.7	100.0
	Total	44	100.0	100.0	

My company would supply the equipment I would need for pumping breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	28	63.6	63.6	63.6
	Yes	16	36.4	36.4	100.0
	Total	44	100.0	100.0	

I could find a place to store expressed breast milk at work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	9.1	9.1	9.1
	Yes	40	90.9	90.9	100.0
	Total	44	100.0	100.0	

There is a company-designated place for women to breastfeed or pump milk during the workday.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	100.0	100.0	100.0

The designated place for breastfeeding or pumping breast milk at work would be available when I needed it.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	15	34.1	34.1	34.1
	Agree	19	43.2	43.2	77.3
	Disagree	5	11.4	11.4	88.6
	Strongly Disagree	5	11.4	11.4	100.0
	Total	44	100.0	100.0	

The designated place for breastfeeding or pumping breast milk is close enough to my work area to use during my breaks.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	14	31.8	31.8	31.8
	Agree	25	56.8	56.8	88.6
	Disagree	4	9.1	9.1	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

I would feel comfortable breastfeeding or pumping breast milk in the designated place.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	18	40.9	40.9	40.9
	Agree	23	52.3	52.3	93.2
	Disagree	3	6.8	6.8	100.0
	Total	44	100.0	100.0	

The designated place for breastfeeding or pumping breast milk is satisfactory.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	16	36.4	36.4	36.4
	Agree	22	50.0	50.0	86.4
	Disagree	5	11.4	11.4	97.7
	Strongly Disagree	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

The designated place for breastfeeding or pumping breast milk includes everything I need.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	17	38.6	38.6	38.6
	Agree	21	47.7	47.7	86.4
	Disagree	4	9.1	9.1	95.5
	Strongly Disagree	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

Appendix I

Cross-tabulation of Job Status (PT of FT) Crossed With the Other Items

Crosstabs

I would have enough maternity leave (paid and/or unpaid time off) to get breastfeeding started before going back to work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I would have enough maternity leave (paid and/or unpaid time off) to get breastfeeding started before going back to work.	Strongly Agree	Count	14	16	30
		% within PT or FT	73.7%	64.0%	68.2%
	Agree	Count	5	6	11
		% within PT or FT	26.3%	24.0%	25.0%
	Disagree	Count	0	3	3
		% within PT or FT	0.0%	12.0%	6.8%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.452[a]	2	.294
Likelihood Ratio	3.563	2	.168
Linear-by-Linear Association	1.328	1	.249
N of Valid Cases	44		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.30.

I would be able to get information about combining work and breastfeeding from my company. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
I would be able to get information about combining work and breastfeeding from my company.	Strongly Agree	Count	7	7
		% within PT or FT	36.8%	28.0%
	Agree	Count	11	14
		% within PT or FT	57.9%	56.0%
	Disagree	Count	1	2
		% within PT or FT	5.3%	8.0%
	Strongly Disagree	Count	0	2
		% within PT or FT	0.0%	8.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
I would be able to get information about combining work and breastfeeding from my company.	Strongly Agree	Count	14
		% within PT or FT	31.8%
	Agree	Count	25
		% within PT or FT	56.8%
	Disagree	Count	3
		% within PT or FT	6.8%
	Strongly Disagree	Count	2
		% within PT or FT	4.5%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.911[a]	3	.591
Likelihood Ratio	2.653	3	.448
Linear-by-Linear Association	1.478	1	.224
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

I'm certain my company has written policies for employees that are breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I'm certain my company has written policies for employees that are breastfeeding or pumping breast milk.	Strongly Agree	Count	6	13	19
		% within PT or FT	31.6%	52.0%	43.2%
	Agree	Count	13	9	22
		% within PT or FT	68.4%	36.0%	50.0%
	Disagree	Count	0	3	3
		% within PT or FT	0.0%	12.0%	6.8%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.592[a]	2	.061
Likelihood Ratio	6.710	2	.035
Linear-by-Linear Association	.203	1	.652
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.30.

I’m certain there is a place I could go to breastfeed or pump breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I’m certain there is a place I could go to breastfeed or pump breast milk at work.	Strongly Agree	Count	14	18	32
		% within PT or FT	73.7%	72.0%	72.7%
	Agree	Count	5	7	12
		% within PT or FT	26.3%	28.0%	27.3%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.015[a]	1	.901		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.015	1	.901		
Fisher's Exact Test				1.000	.588
Linear-by-Linear Association	.015	1	.902		
N of Valid Cases	44				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.18.

b. Computed only for a 2x2 table

There is someone I could go to at work that would help me make arrangements for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
There is someone I could go to at work that would help me make arrangements for breastfeeding or pumping breast milk.	Strongly Agree	Count	7	8
		% within PT or FT	36.8%	32.0%
	Agree	Count	12	12
		% within PT or FT	63.2%	48.0%
	Disagree	Count	0	3
		% within PT or FT	0.0%	12.0%
	Strongly Disagree	Count	0	2
		% within PT or FT	0.0%	8.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
There is someone I could go to at work that would help me make arrangements for breastfeeding or pumping breast milk.	Strongly Agree	Count	15
		% within PT or FT	34.1%
	Agree	Count	24
		% within PT or FT	54.5%
	Disagree	Count	3
		% within PT or FT	6.8%
	Strongly Disagree	Count	2
		% within PT or FT	4.5%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.329[a]	3	.228
Likelihood Ratio	6.177	3	.103
Linear-by-Linear Association	2.040	1	.153
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

My job could be at risk (e.g. lose my job or get fewer scheduled hours) if I breastfed or pumped breast milk at work. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My job could be at risk (e.g. lose my job or get fewer scheduled hours) if I breastfed or pumped breast milk at work.	Disagree	Count	5	6
		% within PT or FT	26.3%	24.0%
	Strongly Disagree	Count	14	19
		% within PT or FT	73.7%	76.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My job could be at risk (e.g. lose my job or get fewer scheduled hours) if I breastfed or pumped breast milk at work.	Disagree	Count	11
		% within PT or FT	25.0%
	Strongly Disagree	Count	33
		% within PT or FT	75.0%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.031[a]	1	.861		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.031	1	.861		
Fisher's Exact Test				1.000	.566
Linear-by-Linear Association	.030	1	.862		
N of Valid Cases	44				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.75.

b. Computed only for a 2x2 table

I would be able to talk about breastfeeding at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I would be able to talk about breastfeeding at work.	Strongly Agree	Count	7	10	17
		% within PT or FT	36.8%	40.0%	38.6%
	Agree	Count	11	13	24
		% within PT or FT	57.9%	52.0%	54.5%
	Disagree	Count	1	2	3
		% within PT or FT	5.3%	8.0%	6.8%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.215[a]	2	.898
Likelihood Ratio	.218	2	.897
Linear-by-Linear Association	.001	1	.982
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.30.

I would feel comfortable asking for accommodations to help me breastfeed or pump breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I would feel comfortable asking for accommodations to help me breastfeed or pump breast milk at work.	Strongly Agree	Count	5	8	13
		% within PT or FT	26.3%	32.0%	29.5%
	Agree	Count	10	14	24
		% within PT or FT	52.6%	56.0%	54.5%
	Disagree	Count	4	3	7
		% within PT or FT	21.1%	12.0%	15.9%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.697[a]	2	.706
Likelihood Ratio	.691	2	.708
Linear-by-Linear Association	.526	1	.468
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.02.

My opportunities for job advancement would be limited if I breastfed or pumped breast milk at work. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My opportunities for job advancement would be limited if I breastfed or pumped breast milk at work.	Agree	Count	5	1
		% within PT or FT	26.3%	4.0%
	Disagree	Count	7	6
		% within PT or FT	36.8%	24.0%
	Strongly Disagree	Count	7	18
		% within PT or FT	36.8%	72.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My opportunities for job advancement would be limited if I breastfed or pumped breast milk at work.	Agree	Count	6
		% within PT or FT	13.6%
	Disagree	Count	13
		% within PT or FT	29.5%
	Strongly Disagree	Count	25
		% within PT or FT	56.8%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.894[a]	2	.032
Likelihood Ratio	7.177	2	.028
Linear-by-Linear Association	6.727	1	.009
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.59.

I'm certain that women in higher-level positions have breastfed or pumped breast milk at my workplace. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I'm certain that women in higher-level positions have breastfed or pumped breast milk at my workplace.	Strongly Agree	Count	10	11	21
		% within PT or FT	52.6%	44.0%	47.7%
	Agree	Count	9	14	23
		% within PT or FT	47.4%	56.0%	52.3%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.322[a]	1	.570		
Continuity Correction[b]	.069	1	.792		
Likelihood Ratio	.323	1	.570		
Fisher's Exact Test				.761	.396
Linear-by-Linear Association	.315	1	.575		
N of Valid Cases	44				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.07.

b. Computed only for a 2x2 table

I’m certain co-workers have breastfed or pumped breast milk at my workplace. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I’m certain co-workers have breastfed or pumped breast milk at my workplace.	Strongly Agree	Count	16	18	34
		% within PT or FT	84.2%	72.0%	77.3%
	Agree	Count	3	7	10
		% within PT or FT	15.8%	28.0%	22.7%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.917[a]	1	.338		
Continuity Correction[b]	.353	1	.552		
Likelihood Ratio	.943	1	.332		
Fisher's Exact Test				.474	.279
Linear-by-Linear Association	.896	1	.344		
N of Valid Cases	44				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.32.

b. Computed only for a 2x2 table

My manager would support me breastfeeding or pumping breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My manager would support me breastfeeding or pumping breast milk at work.	Strongly Agree	Count	9	12	21
		% within PT or FT	47.4%	48.0%	47.7%
	Agree	Count	10	13	23
		% within PT or FT	52.6%	52.0%	52.3%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.002[a]	1	.967		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.002	1	.967		
Fisher's Exact Test				1.000	.604
Linear-by-Linear Association	.002	1	.967		
N of Valid Cases	44				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.07.

b. Computed only for a 2x2 table

My manager would help me combine breastfeeding and work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My manager would help me combine breastfeeding and work.	Strongly Agree	Count	8	10	18
		% within PT or FT	42.1%	40.0%	40.9%
	Agree	Count	11	13	24
		% within PT or FT	57.9%	52.0%	54.5%
	Disagree	Count	0	2	2
		% within PT or FT	0.0%	8.0%	4.5%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.600[a]	2	.449
Likelihood Ratio	2.341	2	.310
Linear-by-Linear Association	.334	1	.563
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .86.

My manager would think I couldn't get all my work done if I needed to take breaks for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager would think I couldn't get all my work done if I needed to take breaks for breastfeeding or pumping breast milk.	Strongly Agree	Count	0	1
		% within PT or FT	0.0%	4.0%
	Agree	Count	0	1
		% within PT or FT	0.0%	4.0%
	Disagree	Count	12	11
		% within PT or FT	63.2%	44.0%
	Strongly Disagree	Count	7	12
		% within PT or FT	36.8%	48.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager would think I couldn't get all my work done if I needed to take breaks for breastfeeding or pumping breast milk.	Strongly Agree	Count	1
		% within PT or FT	2.3%
	Agree	Count	1
		% within PT or FT	2.3%
	Disagree	Count	23
		% within PT or FT	52.3%
	Strongly Disagree	Count	19
		% within PT or FT	43.2%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.589[a]	3	.459
Likelihood Ratio	3.327	3	.344
Linear-by-Linear Association	.002	1	.966
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

I would feel comfortable speaking with my manager about breastfeeding. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
I would feel comfortable speaking with my manager about breastfeeding.	Strongly Agree	Count	4	7
		% within PT or FT	21.1%	28.0%
	Agree	Count	14	17
		% within PT or FT	73.7%	68.0%
	Disagree	Count	1	0
		% within PT or FT	5.3%	0.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
I would feel comfortable speaking with my manager about breastfeeding.	Strongly Agree	Count	11
		% within PT or FT	25.0%
	Agree	Count	31
		% within PT or FT	70.5%
	Disagree	Count	1
		% within PT or FT	2.3%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.334[a]	3	.506
Likelihood Ratio	3.071	3	.381
Linear-by-Linear Association	.057	1	.812
N of Valid Cases	44		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .43.

My manager says things that make me think he/she supports breastfeeding. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager says things that make me think he/she supports breastfeeding.	Strongly Agree	Count	3	7
		% within PT or FT	15.8%	28.0%
	Agree	Count	16	15
		% within PT or FT	84.2%	60.0%
	Disagree	Count	0	2
		% within PT or FT	0.0%	8.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager says things that make me think he/she supports breastfeeding.	Strongly Agree	Count	10
		% within PT or FT	22.7%
	Agree	Count	31
		% within PT or FT	70.5%
	Disagree	Count	2
		% within PT or FT	4.5%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.886[a]	3	.274
Likelihood Ratio	5.016	3	.171
Linear-by-Linear Association	.044	1	.834
N of Valid Cases	44		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .43.

I feel my manager would view breastfeeding as an employee's personal choice. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I feel my manager would view breastfeeding as an employee's personal choice.	Strongly Agree	Count	6	8	14
		% within PT or FT	31.6%	32.0%	31.8%
	Agree	Count	13	17	30
		% within PT or FT	68.4%	68.0%	68.2%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001[a]	1	.976		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.001	1	.976		
Fisher's Exact Test				1.000	.618
Linear-by-Linear Association	.001	1	.977		
N of Valid Cases	44				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.05.

b. Computed only for a 2x2 table

My manager would consider it part of his/her job to help me combine breastfeeding and work. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager would consider it part of his/her job to help me combine breastfeeding and work.	Strongly Agree	Count	3	4
		% within PT or FT	15.8%	16.0%
	Agree	Count	8	14
		% within PT or FT	42.1%	56.0%
	Disagree	Count	8	6
		% within PT or FT	42.1%	24.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager would consider it part of his/her job to help me combine breastfeeding and work.	Strongly Agree	Count	7
		% within PT or FT	15.9%
	Agree	Count	22
		% within PT or FT	50.0%
	Disagree	Count	14
		% within PT or FT	31.8%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.289[a]	3	.515
Likelihood Ratio	2.653	3	.448
Linear-by-Linear Association	.213	1	.644
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

My manager would think less of workers who choose to breastfeed or pump breast milk at work. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager would think less of workers who choose to breastfeed or pump breast milk at work.	Strongly Agree	Count	1	0
		% within PT or FT	5.3%	0.0%
	Agree	Count	2	1
		% within PT or FT	10.5%	4.0%
	Disagree	Count	7	11
		% within PT or FT	36.8%	44.0%
	Strongly Disagree	Count	9	13
		% within PT or FT	47.4%	52.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager would think less of workers who choose to breastfeed or pump breast milk at work.	Strongly Agree	Count	1
		% within PT or FT	2.3%
	Agree	Count	3
		% within PT or FT	6.8%
	Disagree	Count	18
		% within PT or FT	40.9%
	Strongly Disagree	Count	22
		% within PT or FT	50.0%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.172[a]	3	.538
Likelihood Ratio	2.533	3	.469
Linear-by-Linear Association	.973	1	.324
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

My manager would make sure my job is covered if I needed time for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My manager would make sure my job is covered if I needed time for breastfeeding or pumping breast milk.	Strongly Agree	Count	2	6	8
		% within PT or FT	10.5%	24.0%	18.2%
	Agree	Count	11	14	25
		% within PT or FT	57.9%	56.0%	56.8%
	Disagree	Count	6	5	11
		% within PT or FT	31.6%	20.0%	25.0%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.664[a]	2	.435
Likelihood Ratio	1.724	2	.422
Linear-by-Linear Association	1.550	1	.213
N of Valid Cases	44		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 3.45.

My manager would change my work schedule to allow me time for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager would change my work schedule to allow me time for breastfeeding or pumping breast milk.	Strongly Agree	Count	2	6
		% within PT or FT	10.5%	24.0%
	Agree	Count	10	11
		% within PT or FT	52.6%	44.0%
	Disagree	Count	7	6
		% within PT or FT	36.8%	24.0%
	Strongly Disagree	Count	0	2
		% within PT or FT	0.0%	8.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager would change my work schedule to allow me time for breastfeeding or pumping breast milk.	Strongly Agree	Count	8
		% within PT or FT	18.2%
	Agree	Count	21
		% within PT or FT	47.7%
	Disagree	Count	13
		% within PT or FT	29.5%
	Strongly Disagree	Count	2
		% within PT or FT	4.5%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.369[a]	3	.338
Likelihood Ratio	4.169	3	.244
Linear-by-Linear Association	.182	1	.670
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

My manager would help me deal with my workload so I could breastfeed or pump breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My manager would help me deal with my workload so I could breastfeed or pump breast milk at work.	Strongly Agree	Count	2	4	6
		% within PT or FT	10.5%	16.0%	13.6%
	Agree	Count	9	14	23
		% within PT or FT	47.4%	56.0%	52.3%
	Disagree	Count	8	7	15
		% within PT or FT	42.1%	28.0%	34.1%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.021[a]	2	.600
Likelihood Ratio	1.021	2	.600
Linear-by-Linear Association	.929	1	.335
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.59.

My manager would be embarrassed if I spoke with him/her about breastfeeding. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My manager would be embarrassed if I spoke with him/her about breastfeeding.	Strongly Agree	Count	1	1
		% within PT or FT	5.3%	4.0%
	Agree	Count	1	0
		% within PT or FT	5.3%	0.0%
	Disagree	Count	7	11
		% within PT or FT	36.8%	44.0%
	Strongly Disagree	Count	10	13
		% within PT or FT	52.6%	52.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My manager would be embarrassed if I spoke with him/her about breastfeeding.	Strongly Agree	Count	2
		% within PT or FT	4.5%
	Agree	Count	1
		% within PT or FT	2.3%
	Disagree	Count	18
		% within PT or FT	40.9%
	Strongly Disagree	Count	23
		% within PT or FT	52.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.490[a]	3	.685
Likelihood Ratio	1.854	3	.603
Linear-by-Linear Association	.097	1	.756
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

My co-workers would think less of workers that choose to breastfeed or pump breast milk at work. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My co-workers would think less of workers that choose to breastfeed or pump breast milk at work.	Agree	Count	0	1
		% within PT or FT	0.0%	4.0%
	Disagree	Count	11	11
		% within PT or FT	57.9%	44.0%
	Strongly Disagree	Count	8	13
		% within PT or FT	42.1%	52.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My co-workers would think less of workers that choose to breastfeed or pump breast milk at work.	Agree	Count	1
		% within PT or FT	2.3%
	Disagree	Count	22
		% within PT or FT	50.0%
	Strongly Disagree	Count	21
		% within PT or FT	47.7%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.398[a]	2	.497
Likelihood Ratio	1.768	2	.413
Linear-by-Linear Association	.125	1	.724
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .43.

I would feel comfortable speaking with my co-workers about breastfeeding. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I would feel comfortable speaking with my co-workers about breastfeeding.	Strongly Agree	Count	4	10	14
		% within PT or FT	21.1%	40.0%	31.8%
	Agree	Count	14	12	26
		% within PT or FT	73.7%	48.0%	59.1%
	Disagree	Count	1	3	4
		% within PT or FT	5.3%	12.0%	9.1%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.962[a]	2	.227
Likelihood Ratio	3.036	2	.219
Linear-by-Linear Association	.440	1	.507
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.73.

My co-workers say things that make me think they support breastfeeding. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My co-workers say things that make me think they support breastfeeding.	Strongly Agree	Count	5	13	18
		% within PT or FT	26.3%	52.0%	40.9%
	Agree	Count	13	9	22
		% within PT or FT	68.4%	36.0%	50.0%
	Disagree	Count	1	3	4
		% within PT or FT	5.3%	12.0%	9.1%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.549[a]	2	.103
Likelihood Ratio	4.640	2	.098
Linear-by-Linear Association	.950	1	.330
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.73.

My co-workers would change their break times with me so that I could breastfeed or pump breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My co-workers would change their break times with me so that I could breastfeed or pump breast milk.	Strongly Agree	Count	2	7	9
		% within PT or FT	10.5%	28.0%	20.5%
	Agree	Count	14	12	26
		% within PT or FT	73.7%	48.0%	59.1%
	Disagree	Count	3	6	9
		% within PT or FT	15.8%	24.0%	20.5%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.172[a]	2	.205
Likelihood Ratio	3.295	2	.193
Linear-by-Linear Association	.221	1	.638
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.89.

My co-workers would cover my job duties if I needed time for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My co-workers would cover my job duties if I needed time for breastfeeding or pumping breast milk.	Strongly Agree	Count	2	7	9
		% within PT or FT	10.5%	28.0%	20.5%
	Agree	Count	14	14	28
		% within PT or FT	73.7%	56.0%	63.6%
	Disagree	Count	3	4	7
		% within PT or FT	15.8%	16.0%	15.9%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.142[a]	2	.343
Likelihood Ratio	2.265	2	.322
Linear-by-Linear Association	.870	1	.351
N of Valid Cases	44		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 3.02.

My co-workers would be embarrassed if I spoke with them about breastfeeding. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My co-workers would be embarrassed if I spoke with them about breastfeeding.	Strongly Agree	Count	0	1
		% within PT or FT	0.0%	4.0%
	Agree	Count	0	2
		% within PT or FT	0.0%	8.0%
	Disagree	Count	13	8
		% within PT or FT	68.4%	32.0%
	Strongly Disagree	Count	6	14
		% within PT or FT	31.6%	56.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My co-workers would be embarrassed if I spoke with them about breastfeeding.	Strongly Agree	Count	1
		% within PT or FT	2.3%
	Agree	Count	2
		% within PT or FT	4.5%
	Disagree	Count	21
		% within PT or FT	47.7%
	Strongly Disagree	Count	20
		% within PT or FT	45.5%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.697[a]	3	.082
Likelihood Ratio	7.831	3	.050
Linear-by-Linear Association	.163	1	.686
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

My breaks are frequent enough for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My breaks are frequent enough for breastfeeding or pumping breast milk.	Strongly Agree	Count	1	3	4
		% within PT or FT	5.3%	12.0%	9.1%
	Agree	Count	13	18	31
		% within PT or FT	68.4%	72.0%	70.5%
	Disagree	Count	5	4	9
		% within PT or FT	26.3%	16.0%	20.5%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.120[a]	2	.571
Likelihood Ratio	1.147	2	.564
Linear-by-Linear Association	1.086	1	.297
N of Valid Cases	44		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.73.

My breaks are long enough for breastfeeding or pumping breast milk. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
My breaks are long enough for breastfeeding or pumping breast milk.	Strongly Agree	Count	2	4
		% within PT or FT	10.5%	16.0%
	Agree	Count	13	17
		% within PT or FT	68.4%	68.0%
	Disagree	Count	4	3
		% within PT or FT	21.1%	12.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
My breaks are long enough for breastfeeding or pumping breast milk.	Strongly Agree	Count	6
		% within PT or FT	13.6%
	Agree	Count	30
		% within PT or FT	68.2%
	Disagree	Count	7
		% within PT or FT	15.9%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.554[a]	3	.670
Likelihood Ratio	1.923	3	.588
Linear-by-Linear Association	.118	1	.732
N of Valid Cases	44		

a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is .43.

I could adjust my break schedule in order to breastfeed or pump breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I could adjust my break schedule in order to breastfeed or pump breast milk.	Strongly Agree	Count	2	10	12
		% within PT or FT	10.5%	40.0%	27.3%
	Agree	Count	12	11	23
		% within PT or FT	63.2%	44.0%	52.3%
	Disagree	Count	5	4	9
		% within PT or FT	26.3%	16.0%	20.5%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.758[a]	2	.093
Likelihood Ratio	5.156	2	.076
Linear-by-Linear Association	3.534	1	.060
N of Valid Cases	44		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.89.

I could buy or borrow the equipment I would need for pumping breast milk. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I could buy or borrow the equipment I would need for pumping breast milk.	No	Count	1	0	1
		% within PT or FT	5.3%	0.0%	2.3%
	Yes	Count	18	25	43
		% within PT or FT	94.7%	100.0%	97.7%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.346[a]	1	.246		
Continuity Correction[b]	.019	1	.889		
Likelihood Ratio	1.710	1	.191		
Fisher's Exact Test				.432	.432
Linear-by-Linear Association	1.316	1	.251		
N of Valid Cases	44				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

b. Computed only for a 2x2 table

My company would supply the equipment I would need for pumping breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
My company would supply the equipment I would need for pumping breast milk at work.	No	Count	12	16	28
		% within PT or FT	63.2%	64.0%	63.6%
	Yes	Count	7	9	16
		% within PT or FT	36.8%	36.0%	36.4%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.003[a]	1	.954		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.003	1	.954		
Fisher's Exact Test				1.000	.600
Linear-by-Linear Association	.003	1	.955		
N of Valid Cases	44				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.91.

b. Computed only for a 2x2 table

I could find a place to store expressed breast milk at work. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I could find a place to store expressed breast milk at work.	No	Count	3	1	4
		% within PT or FT	15.8%	4.0%	9.1%
	Yes	Count	16	24	40
		% within PT or FT	84.2%	96.0%	90.9%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.816[a]	1	.178		
Continuity Correction[b]	.669	1	.413		
Likelihood Ratio	1.837	1	.175		
Fisher's Exact Test				.300	.207
Linear-by-Linear Association	1.774	1	.183		
N of Valid Cases	44				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.73.

b. Computed only for a 2x2 table

There is a company-designated place for women to breastfeed or pump milk during the workday. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
There is a company-designated place for women to breastfeed or pump milk during the workday.	Yes	Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value
Pearson Chi-Square	.[a]
N of Valid Cases	44

a. No statistics are computed because There is a company-designated place for women to breastfeed or pump milk during the workday. is a constant.

The designated place for breastfeeding or pumping breast milk at work would be available when I needed it. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
The designated place for breastfeeding or pumping breast milk at work would be available when I needed it.	Strongly Agree	Count	4	11
		% within PT or FT	21.1%	44.0%
	Agree	Count	9	10
		% within PT or FT	47.4%	40.0%
	Disagree	Count	3	2
		% within PT or FT	15.8%	8.0%
	Strongly Disagree	Count	3	2
		% within PT or FT	15.8%	8.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
The designated place for breastfeeding or pumping breast milk at work would be available when I needed it.	Strongly Agree	Count	15
		% within PT or FT	34.1%
	Agree	Count	19
		% within PT or FT	43.2%
	Disagree	Count	5
		% within PT or FT	11.4%
	Strongly Disagree	Count	5
		% within PT or FT	11.4%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.956[a]	3	.398
Likelihood Ratio	3.032	3	.387
Linear-by-Linear Association	2.489	1	.115
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.16.

The designated place for breastfeeding or pumping breast milk is close enough to my work area to use during my breaks. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
The designated place for breastfeeding or pumping breast milk is close enough to my work area to use during my breaks.	Strongly Agree	Count	4	10
		% within PT or FT	21.1%	40.0%
	Agree	Count	12	13
		% within PT or FT	63.2%	52.0%
	Disagree	Count	3	1
		% within PT or FT	15.8%	4.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
The designated place for breastfeeding or pumping breast milk is close enough to my work area to use during my breaks.	Strongly Agree	Count	14
		% within PT or FT	31.8%
	Agree	Count	25
		% within PT or FT	56.8%
	Disagree	Count	4
		% within PT or FT	9.1%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.865[a]	3	.276
Likelihood Ratio	4.309	3	.230
Linear-by-Linear Association	1.168	1	.280
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

I would feel comfortable breastfeeding or pumping breast milk in the designated place. * PT or FT

Crosstab

			PT or FT		
			Part time	Full time	Total
I would feel comfortable breastfeeding or pumping breast milk in the designated place.	Strongly Agree	Count	5	13	18
		% within PT or FT	26.3%	52.0%	40.9%
	Agree	Count	14	9	23
		% within PT or FT	73.7%	36.0%	52.3%
	Disagree	Count	0	3	3
		% within PT or FT	0.0%	12.0%	6.8%
Total		Count	19	25	44
		% within PT or FT	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.954[a]	2	.031
Likelihood Ratio	8.117	2	.017
Linear-by-Linear Association	.547	1	.459
N of Valid Cases	44		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.30.

The designated place for breastfeeding or pumping breast milk is satisfactory. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
The designated place for breastfeeding or pumping breast milk is satisfactory.	Strongly Agree	Count	7	9
		% within PT or FT	36.8%	36.0%
	Agree	Count	9	13
		% within PT or FT	47.4%	52.0%
	Disagree	Count	3	2
		% within PT or FT	15.8%	8.0%
	Strongly Disagree	Count	0	1
		% within PT or FT	0.0%	4.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
The designated place for breastfeeding or pumping breast milk is satisfactory.	Strongly Agree	Count	16
		% within PT or FT	36.4%
	Agree	Count	22
		% within PT or FT	50.0%
	Disagree	Count	5
		% within PT or FT	11.4%
	Strongly Disagree	Count	1
		% within PT or FT	2.3%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.385[a]	3	.709
Likelihood Ratio	1.749	3	.626
Linear-by-Linear Association	.002	1	.962
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .43.

The designated place for breastfeeding or pumping breast milk includes everything I need. * PT or FT

Crosstab

			PT or FT	
			Part time	Full time
The designated place for breastfeeding or pumping breast milk includes everything I need.	Strongly Agree	Count	7	10
		% within PT or FT	36.8%	40.0%
	Agree	Count	9	12
		% within PT or FT	47.4%	48.0%
	Disagree	Count	1	3
		% within PT or FT	5.3%	12.0%
	Strongly Disagree	Count	2	0
		% within PT or FT	10.5%	0.0%
Total		Count	19	25
		% within PT or FT	100.0%	100.0%

Crosstab

			Total
The designated place for breastfeeding or pumping breast milk includes everything I need.	Strongly Agree	Count	17
		% within PT or FT	38.6%
	Agree	Count	21
		% within PT or FT	47.7%
	Disagree	Count	4
		% within PT or FT	9.1%
	Strongly Disagree	Count	2
		% within PT or FT	4.5%
Total		Count	44
		% within PT or FT	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.199[a]	3	.362
Likelihood Ratio	3.961	3	.266
Linear-by-Linear Association	.522	1	.470
N of Valid Cases	44		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .86.