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DEVELOPMENT AND PILOTING OF AN INSTRUMENT THAT MEASURES COMPANY SUPPORT FOR BREASTFEEDING

By

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ABSTRACT

DEVELOPMENT AND PILOTING OF AN INSTRUMENT THAT MEASURES COMPANY SUPPORT FOR BREASTFEEDING

By

Sarah Elizabeth Hojnacki

Breastfeeding duration among women employed full-time is lower than for women who do not work outside the home or are employed part-time. There is limited research from the perspective of breastfeeding, working women on what the barriers to and facilitators of breastfeeding while employed are. There are also few studies identifying support provided by employers, which could assist breastfeeding employees. Prior to this study, no instrument was available that measured the level of formal breastfeeding support in companies. The purpose of this study was to develop an instrument to be used in companies which measures the amount of formal breastfeeding support based on the existence of policies, programs, and benefits that may help women combine breastfeeding and employment. Survey design and item development was done through an iterative process. Items and formatting followed the Tailored Design Method (TDM). Expert reviews (n=9) and cognitive interviews (n=4) were performed to ensure validity of the measures of the instrument. The final instrument had 28 items collecting information on formal breastfeeding support; employee demand for breastfeeding support; family-friendly, wellness, and health benefits; and company demographics. The instrument was pilot-tested in 151 companies in Michigan. The results indicated that although few companies had written breastfeeding policies, most allowed women to express milk at work and provided space other than a restroom for this purpose. However, the majority of companies did not provide many other supports such as lactation consultants or electric breast pumps.

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LIST OF ABBREVIATIONS

ADA ..... American Dietetic Association

AAFP ..... American Academy of Family Physicians

AAP ..... American Academy of Pediatrics

CDC ..... Centers for Disease Control and Prevention

DHHS ..... U.S. Department of Health and Human Services

DOL ..... U.S. Department of Labor

DWP ..... Department for Work and Pensions

EPBS ..... Employee Perceptions of Breastfeeding Support questionnaire

MABS ..... Manager Attitudes toward Breastfeeding Support survey

FMLA ..... Family and Medical Leave Act of 1993

IBCLC ..... International Board Certified Lactation Consultant

NLSY ..... National Longitudinal Survey of Youth

SHRM ..... Society for Human Resource Management

TDM ..... Tailored Design Method

USBC ..... United States Breastfeeding Committee

USDA ..... United States Department of Agriculture

WIC ... The Special Supplemental Nutrition Program for Women, Infants, and Children

WHO ..... World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Background

Breastfeeding is the optimal infant feeding method given the significant health benefits it provides to infants and mothers (American Academy of Pediatrics [AAP], 2005; American Dietetic Association [ADA], 2009; U.S. Department of Health and Human Services [DHHS], 2000a). In addition to short- and long-term health benefits for mothers and their infants, breastfeeding results in economic savings for families, health insurance providers, employers, and society (Ball & Bennett, 2001; Ball & Wright, 1999; Montgomery & Splett, 1997). Due to the numerous important benefits, it is recommended that infants be exclusively breastfed for six months with the addition of complementary foods and continued breastfeeding for at least the remainder of the first year of life (American Academy of Family Physicians [AAFP], 2005; AAP, 2005, ADA, 2009). The World Health Organization ([WHO], 2002) recommends that breastfeeding continues for two years or longer. Despite the known benefits, breastfeeding rates in the United States remain below the Healthy People 2010 objectives. Seventy-four percent of mothers who had just given birth initiated breastfeeding in 2005, nearly reaching the national objective of 75% (Centers for Disease Control and Prevention [CDC], 2008). However, only 43% and 21% continued to breastfeed at six and 12 months, respectively (CDC, 2008). These rates do not meet the 50% and 25% national objectives.

Maternal employment status during the first year of an infant's life is a frequently cited barrier to meeting the recommended breastfeeding duration. Many studies have

shown that returning to work within a year of childbirth is negatively associated with breastfeeding duration (Cardenas & Major, 2005; Chatterji & Frick, 2005; Chezem & Friesen, 1999; Cohen & Mrtek, 1994; Fein & Roe, 1998; Haider, Jacknowitz, & Schoeni, 2003; Hills-Bonczyk, Avery, Savik, Potter & Duckett, 1993; Ryan, Zhou, & Arensberg, 2006; Visness & Kennedy, 1997). Among working women, those who are employed full-time have the lowest sustained breastfeeding rates. Full-time employed women have a similar initiation rate to women who are not employed or are employed part-time, but approximately 10% fewer are continuing to breastfeed at six months (Ross Products Division, 2003; Ryan, Zhou, & Arensberg, 2006). Fein, Mandal, and Roe (2008) showed that breastfeeding intensity, or the proportion of feedings that are breast milk versus other liquids, also decreased after women returned to work. Employment is associated with decreased rates of breastfeeding intensity and decreased breastfeeding rates in general, and therefore negatively affects the overall amount of breast milk an infant receives.

Due to their employment status, over half of all women with infants are at risk for early cessation of breastfeeding. More than half (59.5%) of all women are part of the US labor force, 75% of whom are employed full-time (U.S. Department of Labor [DOL], 2009a). Of even greater importance, 56.4% of women with a child under one year of age were employed in 2008 (DOL, 2009b). It is imperative to understand how employment influences successful breastfeeding. The workplace climate may be one input, among others, that factors into breastfeeding rates among working mothers.

Workplace climate can influence whether or not a woman perceives her employer as supportive of breastfeeding. Work climate has been defined as the "shared perceptions of organizational policies, practices, and procedures, both formal and informal"

(Schneider, 1990, p.23). This includes the events and behaviors that are rewarded, supported, and expected in a particular environment. Organizational family support, or "family friendliness," is a construct consisting of the work-family policies and practices that are offered by an organization (Thompson, Jahn, Kopelman, & Prottas, 2004). It also includes messages conveyed to employees about the organization's interest in helping employees balance their work and family lives. Family-friendly benefits, including breastfeeding support, are an important aspect of an organization's climate.

Formal means of organizational support include written policies, schedule flexibility, and work-family benefit availability; informal means include job autonomy, manager support, an organization's ability to communicate respect for employees' non-work lives, and career impact concerns (Behson, 2005; Thompson, Jahn, Kopelman, & Prottas, 2004). A few studies (Behson, 2005; Thompson, Jahn, Kopelman, & Prottas, 2004) have found that informal means of organizational work-family support are greater predictors of job satisfaction, work-family conflict, stress, organizational attachment, and turnover intentions than are formal means of organizational support. However, formal means of support still constitute a portion of work climate and are an important component for consideration of the overall work climate.

Previous studies cite barriers to and facilitators of breastfeeding in the workplace. The formal aspects of companies identified as barriers to breastfeeding include short maternity leave, insufficient break time to express milk at work, and inadequate facilities for expressing milk (Auerbach, 1990; Chezem & Friesen, 1999; Cohen & Mrtek, 1994; Dodgson, Chee & Yap, 2004; Guendelman, Kosa, Pearl, Graham, Goodman, & Kharrazi, 2009; Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993; Kearney & Cronenwett,

1991; Roe, Whittington, Fein & Teisl, 1999). Factors that are supportive of breastfeeding at the workplace include a clean, private space for milk expression, support groups, adequate break time for pumping or nursing, on-site day care, flexible schedules, and educational materials or programs about breastfeeding (Auerbach, 1990; Cardenas & Major, 2005; Cohen & Mrtek, 1994; McLeod, Pullon, & Cookson, 2002; Thompson & Bell, 1997; Visness & Kennedy, 1997; Whaley, Meehan, Lange, Slusser, & Jenks, 2002).

From a review of the literature, a framework characterizing formal means of company breastfeeding support was constructed. This framework consists of two components that are key factors for defining company breastfeeding support: 1) time support; and 2) structural support. Time is composed of breaks, maternity leave, and flexible scheduling options. This category describes the time it takes for women to establish and continue breastfeeding, and may alter her work schedule. Structural support is made up of the tangible supports a company can offer that help women combine breastfeeding and work. It includes designated rooms for breastfeeding, breast pump equipment, lactation services such as lactation consultant referrals, and onsite daycare. Furthermore, it includes education for employees on breastfeeding or expressing milk, including education on any written policies concerning these behaviors at the workplace. The two components of time and structural support were used in this study to determine a company's level of formal breastfeeding support.

1.2 Rationale

Limited research has been conducted around work climate and breastfeeding support. Many studies have identified individual facilitators of and barriers to

breastfeeding in the workplace, providing a better understanding of working mothers' perceptions of how companies can be supportive of combining breastfeeding and employment. However, no studies to date have thoroughly examined the extent to which breastfeeding support is formally provided in companies. Additionally, no instrument is available that can quantitatively measure a company's level of formal breastfeeding support. A survey of small, medium, and large businesses in Colorado was used to calculate the frequency of select breastfeeding support policies and practices (Dunn, Zavela, Cline, & Cost, 2004). However, the survey was not inclusive of all facilitators of the combining of breastfeeding and employment found in the literature (e.g., support groups for breastfeeding employees, educational classes on breastfeeding and pumping). Furthermore, the survey was only intended to calculate the prevalence of policies and practices and not to score companies on their overall level of formal breastfeeding support. The Society for Human Resource Management (SHRM, 2007b) also collects data on company breastfeeding support. However, they only survey for onsite lactation rooms, onsite daycare, and lactation consulting and education, and do not include all breastfeeding supports that may be available. No study of breastfeeding supports available in Michigan companies has been performed, which provides justification for a pilot study in this state.

It was necessary to develop an instrument that measures the level of formal company breastfeeding support as determined by policies, programs, and benefits that help women combine breastfeeding and employment. This instrument will be valuable for identifying which breastfeeding support components are common or less prevalent across companies. By knowing which support components are less prevalent, specific

lactation support programs can be developed and targeted toward organizations lacking support. The measure of existing breastfeeding support will also be helpful to individual companies assessing their own formal breastfeeding support. It will allow them to identify gaps in support at their organization, and will be useful as an employee recruitment and retention tool.

1.3 Research Goal

To develop an instrument for use in companies that determines the amount of formal breastfeeding support based on the existence of policies, programs, and benefits that help women combine breastfeeding and employment.

1.4 Research Objectives

Research Objective #1: Develop an instrument that identifies the prevalence of policies, programs, and benefits in companies that are supportive of breastfeeding.

Research Objective #2: Pilot the instrument in select business sectors in Michigan.

Research Objective #3: Evaluate the levels of time, structural, and overall breastfeeding support in companies completing the survey.

#3a: Determine if the overall level of company support for breastfeeding can be assessed based on the framework characterizing formal means of company breastfeeding support.

#3b: Characterize companies offering greater versus less breastfeeding support.

CHAPTER 2

LITERATURE REVIEW

2.1 Benefits of breastfeeding

Breastfeeding is the optimal infant feeding method given the significant health benefits it provides to both infant and mother. Extensive research presents evidence that breastfeeding decreases the risk and severity of many illnesses throughout life. Breastfed children have fewer incidences of diarrhea, respiratory and ear infections, allergic diseases including asthma, and postneonatal death (Chen & Rogan, 2004; Cushing, Samet, Lambert, Skipper, Hunt, Young, et al., 1998; Dewey, Heinig, & Nommsen-Rivers, 1995; Duffy, Faden, Wasielewski, Wolf, & Krystofik, 1997; Ip, Chung, Raman, Chew, Magula, DeVine, et al., 2007; Oddy & Peat, 2003; Scariati, Grummer-Strawn, & Fein, 1997). Positive associations with cognitive development and visual acuity have also been found (Anderson, Johnstone, & Remley, 1999; Singhal, Morley, Cole, Kennedy, Sonksen, Isaacs, et al., 2007). Furthermore, many studies have shown lower rates of several chronic diseases later in life for those who were breastfed as infants. Decreased rates are suggested for overweight and obesity, type 1 and type 2 diabetes, some cancers, and gastrointestinal diseases (Dewey, 2003; Gillman, Rifas-Shiman, Camargo, Berkey, Frazier, Rockett, et al., 2001; Klement, Cohen, Boxman, Joseph, & Reif, 2004; Ip, Chung, Raman, Chew, Magula, DeVine, et al., 2007; Owen, Martin, Whincup, Smith, & Cook, 2006; Rosenbauer, Herzig, & Giani, 2008).

Women also receive health benefits from breastfeeding their children. Those who choose this feeding option have a faster return to pre-pregnancy weight and a decreased

risk for ovarian and breast cancer compared to women who do not breastfeed (Danforth, Tworoger, Hecht, Rosner, Colditz, & Hankinson, 2007; Dewey, Heinig, & Nommsen, 1993; Ip, Chung, Raman, Chew, Magula, DeVine, et al., 2007; Labbok, 2001). Breastfeeding may help enhance the psychological bonding between mother and child (Kuzela, Stifter, & Worobey, 1990; Windstrom, Wahlberg, Mattiesen, Eneroth, Uvnäs-Moberg, Werner, et al., 1990). Due to the numerous important benefits, it is recommended that infants be exclusively breastfed for six months, with the addition of complementary foods and continued breastfeeding for at least the remainder of the first year of life (AAFP, 2005; AAP, 2005, ADA, 2009). The World Health Organization ([WHO], 2002) recommends that breastfeeding continue for up to two years or longer.

In addition to benefits for infants and mothers, there are economic benefits of breastfeeding in comparison to formula feeding for families, society, health insurance providers, and employers (Ball & Bennett, 2001). Savings include decreased annual health care costs, lower costs for public health programs such as The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), less environmental burden due to decreased formula packaging and bottle waste, and less expenditure on breast milk substitutes by individuals and families (Ball & Bennett, 2001; Ball & Wright, 1999; Montgomery & Splett, 1997; Weimer, 2001).

2.2 Breastfeeding recommendations and prevalence

Despite the known benefits of breastfeeding, initiation and duration rates are below national goals (CDC, 2008). Recognizing the potential consequences of not breastfeeding, the US Department of Health and Human Services ([DHHS], 2000b) set

objectives for 75% of mothers to initiate breastfeeding, and for 50% and 25% to continue breastfeeding through six and 12 months, respectively, as part of the Healthy People 2010 health objectives (Table 1). Given the dose-response effect evidenced in studies of exclusive breastfeeding, many organizations recommend that exclusive breastfeeding should be practiced rather than mixed-method feeding during the first six months of an infant's life (AAFP, 2001; AAP, 1997; United Nations Children's Fund, 1999; WHO, 2001). Therefore, objectives for exclusive breastfeeding were added to Healthy People 2010 at the midcourse review. These objectives aim for 40% and 17% of mothers to provide their infants breast milk only, without the addition of other liquids or solids, for three and six months, respectively (DHHS, 2006). However, results of the National Immunization Survey showed that, in 2005, breastfeeding duration objectives were not met. While 74% of mothers initiated breastfeeding – just below the 75% goal – at six and 12 months , breastfeeding sustenance fell short of objectives at 43% and 21%, respectively (CDC, 2008). The prevalence of women exclusively breastfeeding was also lower than objectives, as only 32% were breastfeeding at three months, and 12% at six months (CDC, 2008). Furthermore, average breastfeeding initiation and duration rates at six and 12 months in 2005 in Michigan were even lower than the national averages (Table 1) (CDC, 2008) indicating a need for studies understanding this discrepancy.

Table 1. Healthy People 2010 objectives and national averages for breastfeeding initiation and duration in 2005 (Data from CDC, 2008).

Breastfeeding Rate	Healthy People 2010 objective	2005 National Average	2005 MI Average
Initiation	75%	74%	66%
Through 6 months	50%	43%	35%
Through 12 months	25%	21%	19%
Exclusively through 3 months	40%	32%	N/A
Exclusively through 6 months	17%	12%	N/A

The United States Department of Agriculture's [USDA] Economic Research Service found that by meeting national objectives for exclusive breastfeeding, at least 3.6 billion dollars could be saved in the US annually on medical expenses, wages lost by parents caring for an ill child, and the prevention of premature deaths (Weimer, 2001). This figure is based solely on the reduction in incidences of otitis media, gastroenteritis, and necrotizing enterocolitis.

2.3 Breastfeeding and employment

Breastfeeding initiation and duration are lower than desired for US women collectively. However, breastfeeding duration among women who return to work full-time after having a child is even lower than the duration of their non-working and part-time employed counterparts. Women employed full-time have almost the same initiation rate as women who are not employed or are employed part-time, but the amount of full-time employed women continuing to breastfeed at six months is approximately 10% fewer than their counterparts (Ross Products Division, 2003; Ryan, Zhou, & Arensberg,

2006). Fein, Mandal, and Roe (2008) showed that breastfeeding intensity, or the proportion of feedings that are breast milk versus other liquids, also decreased after women returned to work. The decline in breastfeeding intensity was less for women who had reduced work hours compared to other women upon return to the job. Therefore, employment not only has an effect on duration of breastfeeding, but also on rates of exclusive breastfeeding. The discrepancy in breastfeeding rates provides evidence that full-time maternal employment is a barrier to achieving national breastfeeding objectives. The difference in breastfeeding rates between women employed full-time and their counterparts may be due to mother employees perceiving the work place as not being supportive of breastfeeding (Cardenas & Major, 2005; Rojjanasrirat, 2004). Therefore, it is imperative to understand work climate from the perception working mothers.

With the proportion of women in the workforce continually increasing (U.S. Department of Labor [DOL], 2009a), the US will likely continue to fall short of its breastfeeding goals. In 2008, 59.5% of all women were part of the labor force, 75.4% of whom were employed full-time (DOL, 2009a). Of even greater importance, 56.4% of women with an infant under one year of age were employed (DOL, 2009b). Therefore, over half of mothers who had a baby within the last year have an increased risk for decreased breastfeeding rates due to their employment status.

Reduced or early discontinuation of breastfeeding by working mothers results in negative consequences not only for the mother and infant, but for employers as well. Infants who are not breastfed are ill more often and need more annual physician visits (Ball & Wright, 1999; Raisler, Alexander, & O'Campo, 1999). This results in loss of productivity to companies due to more frequent and longer absenteeism of mothers as

well as diminished attention to work tasks for mothers required to be at work while worrying about a sick child at home (Cohen & Mrtek 1994; Cohen, Mrtek, & Mrtek, 1995). Infant illnesses also account for an increase in medical costs to companies due to greater use of health insurance (Ball & Bennett, 2001; Ball & Wright, 1999; Cohen, Mrtek, & Mrtek, 1995).

It is beneficial for employers to help mothers combine breastfeeding and work. In addition to reduced absenteeism and increased productivity, employers can experience improved employee morale and job satisfaction (Ball & Bennett, 2001); organizational attractiveness (Seijts, 2002; United States Breastfeeding Committee [USBC], 2002); greater employee commitment (Bond, Galinsky, & Swanberg, 1998; Thompson, Beauvais, & Lyness, 1999); higher employee retention rates (Ball & Bennett, 2001; Ortiz, McGilligan, & Kelly, 2004); and overall annual savings (Ball & Bennett, 2001; Bond, Galinsky, & Swanberg, 1998; USBC, 2002). In sum, organizations have a positive return on investment for offering breastfeeding support.

2.4 Legislation

It has been shown that breastfeeding promotion legislation is associated with the percentage of infants who are ever breastfed, and the duration for which they are breastfed. In states that have passed multiple pieces of legislation, including the right for mothers to take breaks at work to breastfeed or express breast milk, 76% of children were reported to have ever been breastfed compared to only 63.7% of children in states with no such legislation (Kogan, Singh, Dee, Belanoff, & Grummer-Strawn, 2008). Similarly, more children were estimated to have been breastfed for at least six months in states with

multiple pieces of breastfeeding promotion legislation (42.4% vs. 32.1%). Even though the reasons for low breastfeeding rates are complex, supportive breastfeeding legislation may also influence breastfeeding decisions.

Unfortunately, there is not much legislative support for workplace breastfeeding in the United States. There is no federal legislation related to breastfeeding at the workplace. While 24 states, the District of Columbia, and Puerto Rico all have laws regarding breastfeeding in the workplace, Michigan is not included (National Conference of State Legislatures, 2010). Under Michigan law, women are protected from public indecency charges when breastfeeding in public (Mich. Comp. Laws § 41.181,67.1aa and § 117.4i et seq. (1994)). A few states, such as California, Connecticut, Illinois, and Washington have state laws requiring employers to provide private rooms where mothers can express milk (National Conference of State Legislatures, 2009). Other states also require employers to allow reasonable time during the workday for a mother to breastfeed or express. Although nearly half of the states have laws addressing breastfeeding at work, many are worded vaguely, thus leaving it up to individual employers to use their own discretion as to what is appropriate support. Furthermore, most of these laws do not have enforcement provisions or penalties, making it easier for employers to not abide by them.

The "Breastfeeding Promotion Act of 2009" (H.R. 2819) was introduced to the US House of Representatives in June, 2009 by Representative Carolyn B. Maloney (D-NY) (Maloney, 2009). The goals of this amendment to the Civil Rights Act of 1964 are to promote the health and well-being of infants whose mothers return to the workplace after childbirth, and to clarify that breastfeeding and expressing breast milk in the workplace are protected conduct under the amendment made by the Pregnancy Discrimination Act

of 1978. This act states that any employer with 50 or more employees shall provide break time for an employee to express breast milk for one year after a child's birth. The employer shall also make efforts to provide a space (other than a restroom) that is shielded from view and free from intrusion from co-workers and the public, and can be used by an employee to express breast milk. Under this act, employers who accommodate mothers who are breastfeeding or expressing will also receive a 50% credit on expenditures on qualified breastfeeding promotion and support. If this bill is passed, it will ensure protection of all mothers who wish to continue breastfeeding after returning to work, and be the first nation-wide attempt at incorporating breastfeeding support into the workplace. It should also be noted, however, that this act has limitations. Not all companies may have space available in order to provide a private area for breastfeeding or pumping. Secondly, this is the fifth time that this act has introduced, leaving the success of its acceptance uncertain.

2.5 Work climate

A successful combination of the roles of breastfeeding mother and employee can result in valuable outcomes for a woman, her infant, and her employer. However, the successful dual role is challenging for many full-time employed women with infants if her workplace is not supportive of breastfeeding (Cardenas & Major, 2005; Rojjanasrirat, 2004). Work climate has been defined as the "shared perceptions of organizational policies, practices, and procedures, both formal and informal" (Schneider, 1990, p.23). This includes the events and behaviors that are rewarded, supported, and expected in a particular environment. The climate of a woman's workplace influences whether or not

she perceives her employer as supportive. Figure 1 displays the work climate model for breastfeeding support.

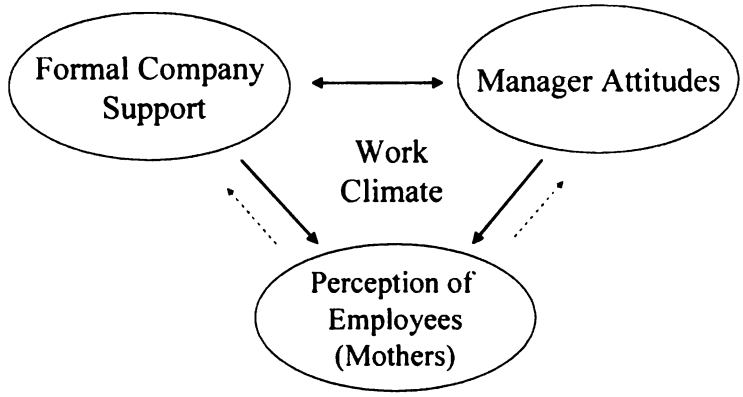


Figure 1. Work climate model for breastfeeding support.

Organizational Family Support, or "family friendliness," is a construct consisting of the work-family policies and practices that are offered by an organization and the messages that are conveyed about the organization's interest in helping employees balance their work and family lives (Thompson, Jahn, Kopelman, & Prottas, 2004). Family-friendly benefits are therefore an important aspect of an organization's climate. Commitment-based human resource practices like offering family-friendly benefits create an organizational climate that motivates employees to act in the best interest of their employer, rather than only in their individual self-interest (Collins & Smith, 2006). By providing benefits for employees that help them balance family life and work, a situation that is beneficial to the employee and organization is created. The employee perceives the work climate as supportive of a work-family balance which leads to increased job

satisfaction, employee morale, and loyalty and commitment to their company (Thompson, Beauvais, & Lyness, 1999; Work & Family Connection, 2005). In turn, results for the organization include increases in individual job performance, overall company performance, and effectiveness due to lower turnover and absenteeism (Goff, Mount, & Jamison, 1990; Patterson, Warr, & West, 2004; Work & Family Connection, 2005). Family-friendliness creates motivation for employees to work towards organizational goals.

Breastfeeding support falls within the family-friendliness construct. Drawing conclusions from the effects that work-family benefits in general have on companies and their employees, it is logical that breastfeeding support would create similar results. While work climate has not been thoroughly studied through the perceptions of new mother employees, the following scenario is plausible. If a company offers employees a supportive way to combine breastfeeding and employment, the employees would have greater ease in combining breastfeeding with work, resulting in greater job satisfaction. This would contribute to an increase in productivity for the organization due to less maternal absenteeism and greater company loyalty from breastfeeding employees. Incorporating breastfeeding support into organizations is one practice that can lead toward achievement of organizational goals, and decreased barriers to continued breastfeeding.

Formal means of organizational support include written policies, schedule flexibility, and work-family benefit availability. Informal means include job autonomy, manager support, an organization's ability to communicate respect for employees' non-work lives, and career impact concerns. Some studies (Behson, 2005; Thompson, Jahn,

Kopelman, & Prottas, 2004) have found that informal means of organizational work-family support are greater predictors of job satisfaction, work-family conflict, stress, organizational attachment, and turnover intentions than are more formal means of organizational support. However, formal means of support still constitute a portion of work climate and are important to consider.

Many employees that are pregnant or have infants think their employers should do more to help support breastfeeding at the workplace (Kosmala-Anderson & Wallce, 2006; Wallace, Kosmala-Anderson, Mills, Law, Skinner, Bayley, et al., 2008). If organizations are to create a supportive work climate and properly accommodate breastfeeding employees, an understanding of workplace facilitators of and barriers to breastfeeding must be achieved. The remainder of this literature review focuses on formal means of organizational support that may help a woman combine breastfeeding and employment.

2.6 Formal organizational support

2.6.1 Written policies

There have been very few studies to date that have examined the existence of formal breastfeeding accommodations within US companies. Only one study could be identified that reported the prevalence of written workplace policies regarding breastfeeding support in US businesses (Dunn, Zavela, Cline, & Cost, 2004). This study surveyed small, medium, and large companies in Colorado to identify the frequency of breastfeeding policies and practices within the state. The researchers reported that, of 157 companies that responded, only six reported having a specific written policy regarding

worksite breastfeeding support. The authors concluded that for companies that already had some breastfeeding supports available, but no written policy, there was an opportunity for low-cost expansion of worksite breastfeeding support through translation of already available services into breastfeeding support policies

Dodgson, Chee, and Yap (2004) also advocated the creation of workplace policies since without policies in place, the type or amount of breastfeeding support employees receive may solely depend on their supervisor's goodwill. Furthermore, they claim that breastfeeding support policies are essential as they validate the right for women to provide their children breast milk even when individual supervisors are not supportive.

Studies that indentify the prevalence of written company policies specific to breastfeeding support are lacking. Studies should be conducted to identify their existence state-wide as well as nationally. Where non-existent, policies should be advocated to ensure the opportunity for women to continue breastfeeding after returning to work. A study that surveyed the general public's beliefs about breastfeeding policies in various settings found that a large proportion of the general public supports policies regarding breastfeeding support (Li, Hsia, Fridinger, Hussain, Benton-Davis, & Grummer-Strawn, 2004). The most acceptable policies surveyed were establishing workplace breastfeeding policies and lactation rooms in public places. Although this study surveyed the general public, the findings show a general acceptability of having breastfeeding support policies at the workplace, and should make it easier for employers to implement such policies.

2.6.2 Maternity Leave and the Family and Medical Leave Act of 1993(FMLA)

A greater proportion of women with children are in the workforce now than ever before. After having a child, mothers may elect to return to work or may find it financially necessary. The Family and Medical Leave Act of 1993 (FMLA) requires that employers with 50 or more employees provide up to 12 weeks of unpaid, job-protected leave to qualified employees for the birth or adoption of a child, or for the employee's personal or family health needs. Qualified employees have been employed with the employer for a minimum of 12 months and with a total of 1,250 hours worked in the calendar year prior to requesting the time off (DOL, 1993). With these stipulations, not all workers are covered by this law; approximately one-half of the workforce is not covered by FMLA due simply to the size of their employers (Berger, Hill, & Waldfogel, 2005; Repa, 2007). Some states and the District of Columbia have legislation that provides longer or paid family leaves, or allows women to be eligible for maternity leave under broader conditions than set by the federal FMLA (DOL, 2009c; Repa, 2007). However, Michigan does not have its own leave laws and thus its employees are only entitled to benefits under the federal FMLA.

The Society for Human Resource Management [SHRM] conducted a survey of human resource professionals about the impact of FMLA on their companies (2007a). Results of the study indicate that the second largest request to use FMLA is for maternity, birth, or adoption of a child. In 2007, less than half (44%) of employers surveyed offered any extension of job-protected leave (paid or unpaid) beyond FMLA provisions. The most common extension of job-protected leave was by substituting accrued sick or vacation leave for FMLA. However, some organizations did offer more than 12 weeks of

job-protected leave or allowed employees who had not met the minimum requirements for FMLA eligibility to have job protected leave.

Adequate length of maternity leave may be essential to establishing breastfeeding (Rea & Morrow, 2004) and may also predict longer breastfeeding duration. Guendelman, Kosa, Pearl, Graham, Goodman & Kharrazi (2009) examined the relationships between breastfeeding and maternity leave for women in California, one of the few states offering paid pregnancy leave that can be extended for infant bonding. Their findings showed that maternity leave less than six weeks, or between six and 12 weeks in length was associated, respectively, with fourfold and twofold higher odds of failure to establish breastfeeding along with an increased probability of cessation after successful establishment compared to maternity leave greater than 12 weeks in length.

A secondary analysis of the 1987-2000 waves of the National Longitudinal Survey of Youth [NLSY] found that 63% of women who worked prenatally returned to work within 12 weeks of giving birth, and half of these women returned full-time (Berger, Hill, & Waldfogel, 2005). The length of leave between birth and return to work can impact a woman's duration of breastfeeding. Literature greatly supports that longer maternity leaves are associated with longer breastfeeding duration (Auerbach & Guss, 1984; Authur, Saenez & Replogle, 2003; Chezem & Friesen, 1999; Cohen & Mrtek, 1994; Guendelman, Kosa, Pearl, Graham, Goodman & Kharrazi, 2009; Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993; Kearny & Cronenwett, 1991; Roe, Whittington, & Teisl, 1999; Visness & Kennedy, 1997). Some studies have found that the greatest risk of early cessation of breastfeeding is for women who return to work within 12 weeks of childbirth (Authur, Saenez & Replogle, 2003; Chatterji & Frick, 2005; Fein & Roe, 1998;

Guendelman, Kosa, Pearl, Graham, Goodman, & Kharrazi, 2009; Lindberg, 1996; Roe, Whittington, Fein, & Teisl, 1999), the length of job-protected leave mandated by FMLA. One study found that returning to work when the infant was older rather than younger was significantly associated with a greater decline in breastfeeding intensity and shorter duration, but it was also theorized that this may be confounded with the general trend of weaning older infants (Fein, Mandal, & Roe, 2008). In another study, it was shown that having maternity leave had no effect on breastfeeding rates, unless the leave was taken (Guendelman, Kosa, Pearl, Graham, Goodman & Kharrazi, 2009). This stresses the importance of employer support for education of leave policies as well as acceptance of breastfeeding behaviors. Because FMLA only provides 12 weeks of leave and recommendations for breastfeeding are longer, other workplace supports become necessary.

Paid leave policies result in more maternal time off work (McGovern, Dowd, Gjerdingen, Moscovice, Kochevar, & Murphy, 2000). This is a concern for women who lack paid maternity leave since they are likely to use vacation and sick days to be paid during maternity leave, and therefore lack any paid leave benefits for the remainder of the infant's first year – the period when the incidence of acute illness for both mothers and infants is relatively high (Kamerman, Kahn, & Kingston, 1983). By exhausting FMLA benefits after childbirth, a woman may have no other parental leave benefits for the year.

Other developed countries have more legislative support for maternity leave than the US. In the United Kingdom, women can receive paid maternity leave for up to 39 weeks given certain employment conditions (Department for Work and Pensions [DWP], 2008). A number of other European countries, including Germany, Italy, Spain, and

Portugal, also mandate that maternity leaves be paid (Galtry, 2003). Sweden, which has one of the highest breastfeeding rates, provides paid leave for 16 months, with 13 months paid at 80% of previous earnings, and the remaining three months paid at a standard and flat rate for all recipients. These benefits are taken from the general taxes with no direct costs to the employers (Ronsen & Sundstrom, 1996). In a survey conducted in England of women's experiences and views of breastfeeding support at work, the most common mentioned positive experience was a long maternity leave (Kosmala-Anderson & Wallace, 2006). Another study conducted in the US found that when women were asked what changes they most desired in their workplace to help combine breastfeeding and employment, nearly half of the sample stated 'paid leave to care for newborns... would constitute a high priority for change' (McGovern, Dowd, Gjerdingen, Moscovice, Kochevar, & Murphy, 2000). Because the FMLA is unpaid, individual employers should consider providing pay during this leave to increase breastfeeding rates among employed mothers.

2.6.3 Corporate lactation programs

While there is no universally agreed upon definition of what should be included in a corporate lactation program, these programs are designed to promote breastfeeding among working mothers by providing appropriate facilities and other types of support at the worksite (Click, 2006). The United States Breastfeeding Committee (USBC, 2002) issued a report outlining components of different levels of workplace breastfeeding support. The "adequate," "expanded," and "comprehensive" levels of support include suggestions on what types of facilities, written company policies, and workplace

education are appropriate. These suggestions are meant to help companies tailor a lactation program to the needs of their employees.

Companies such as CIGNA Corporation that incorporate lactation programs at their worksites have found increased breastfeeding durations among their employees utilizing the benefits. The lactation program offered at this company includes consultations with a professional lactation consultant before and after birth, access to a private room at the worksite, a hospital grade breast pump, refrigeration and a carry case for expressed breast milk, along with all the supplies that are needed to express breast milk. Seventy-two percent of new mother employees at CIGNA were breastfeeding at six months compared to 21% of new mother employees nation-wide when a study designed to evaluate the effectiveness of their lactation program was performed (CIGNA, 2000). They also reported an annual savings of $240,000 in health care costs for 182 breastfeeding mothers and their children who utilized their lactation program, as well as an additional $60,000 in savings by decreasing absenteeism among breastfeeding employees compared to non-breastfeeding employees with infants. (CIGNA, 2000).

Breastfeeding rates among employees from five different corporations contracting Limerick, Inc. to provide company-paid-for breastfeeding services as part of employee benefits packages were also evaluated (Ortiz, McGilligan, & Kelly, 2004). These programs included corporate policies assuring that employees who decided to breastfeed would be supported; private, locked rooms at the worksite for pumping; lightweight, electric, autocycling breast pumps with accessories enabling both breasts to be pumped simultaneously; and prenatal breastfeeding classes given by International Board Certified Lactation Consultants [IBCLCs]. In addition, the IBCLCs educated supervisors at each

worksite on the needs of lactating women and assured them that the program was designed to avoid interference with the productive workday by using employees' regular breaks and lunch time for expressing breast milk. For the participants enrolled in this program and who returned to work after childbirth, 57.8% were still breastfeeding at six months. This result was above the national average as well as the Healthy People 2010 objective.

The results of studies assessing the effectiveness of corporate lactation programs should be interpreted with caution, however, as mothers enrolling in these types of programs are self-selected and may have greater intentions to breastfeed longer. While it has been shown that mothers who participate in corporate lactation programs tend to have longer breastfeeding durations than working mothers who do not, it is not known which elements of the programs are responsible for these rates, or if it is the combination of numerous types of support. This gap in research provides an opportunity for future research to examine which elements of a lactation program have are most effective at increasing continued breastfeeding among working mothers.

2.6.4 Nursing rooms and breast pump equipment

It is imperative that women have a private, comfortable space to breastfeed or express milk when at work since breastfeeding or pumping regularly throughout the day has been cited by women as one way to maintain adequate milk supply and continue breastfeeding (Thompson & Bell, 1997). It is also important for sanitation and health reasons that this space not be a restroom. When women from several studies did not have designated breastfeeding or pumping areas at the worksite, they discontinued

breastfeeding or resorted to using the restroom, which is associated with a lower duration of breastfeeding (Brown, Poag, & Kasprzycki, 2001; Cohen & Mrtek, 1994; Chezem & Friesen, 1999; Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993; Rojjanasrirat, 2004; Stevens & Janke, 2003; Thompson & Bell, 1997; Witters-Green, 2003).

If a worksite does not have extra space for a dedicated lactation room, women may use private offices, unused conference rooms, or other unoccupied space that is private from coworkers in order to breastfeed or express milk. Ideally, however, employers should have dedicated spaces that are appropriate for nursing or expressing milk. The United States Breastfeeding Committee (USBC, 2002) provides suggestions for space that is acceptable for breastfeeding employees to use. The USBC states it is important that a sink be in or near the room women use to pump in order to wash their hands and clean breast pump equipment. They also suggest that rooms include a table, comfortable chair, electrical outlet for the use of breast pumps, aesthetics that promote relaxation, and refrigerator space for the storage of breast milk.

The absence of breast pumps at the workplace has been cited as an obstacle to continuing breastfeeding after returning to work (Cohen & Mrtek, 1994) and availability was found to be a significant predictor of breastfeeding (Whaley, Meehan, Lange, Slusser, & Jenks, 2002). Therefore, if employers provide breast pump equipment in addition to providing private, comfortable space for breastfeeding or pumping, they will facilitate the continuation of breastfeeding for women who return to work after having a baby.

2.6.5 Break time

In order for women to provide adequate amounts of milk to her infant, breastfeeding or pumping milk must occur at regular intervals according to the needs of her infant. This generally includes breastfeeding or expressing regularly while at work (Rojjanasrirat, 2004; Thompson & Bell, 1997). A study was conducted to determine the amount of time it takes mothers to express milk at work each depending on the age of her infant (Slusser, Lange, Dickson, Hawkes, & Cohen, 2004). This study (conducted in a workplace environment supportive of breastfeeding) found that on average, a woman expresses just over two times per day (2.2 ± 0.8) when her infant is three months old. At six months of age, the frequency significantly decreases to just under two times per day (1.9 ± 0.6). At both ages, the majority of women (82-96%) spend a total of one hour or less expressing milk each day, and the amount of time is significantly less with older infants. This study, along with a previous study (Roe, Whittington, Fein, & Teisl, 1999), found that the number of expressions during the workday did not affect the amount of time mothers worked during the week. Both studies found that women could successfully adapt breastfeedings or time for expression to her workday routine in order to overcome the time barrier.

However, finding adequate time to breastfeed or express milk during the workday is still considered one of the barriers to combining breastfeeding and employment (Auerbach, 1990; Auerbach & Guss, 1984; Cohen & Mrtek, 1994; Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993; Kearney & Cronenwett, 1991). Providing break time to breastfeeding mothers is an inexpensive way to provide support at the workplace, especially when it does not take away from the amount of time a woman works overall.

2.6.6 Education and support

Employers can promote breastfeeding by providing access to breastfeeding education for their employees. Studies have found that breastfeeding education can be pivotal in influencing women's intentions on how long to continue breastfeeding (Kearney & Cronenwett, 1991) and is significantly related to longer total duration of breastfeeding (Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993). Employers can help shape this intention and influence breastfeeding rates by providing educational materials or offering classes that promote the benefits of continued breastfeeding as well as solutions for combining breastfeeding and employment. This type of education can help women form realistic expectations of breastfeeding and is a less expensive intervention that can be applied across different industries and occupational levels (Cardenas & Major, 2005).

Lactation consultants are instrumental in providing education and support to breastfeeding employees (Bar-Yam, 1998; Cohen & Mrtek, 1994; Kuan, Brito, Decolongon, Schoettker, Atherton, & Kotagal, 1999). Companies can employ them to work onsite with breastfeeding employees or give referrals to local lactation consultants, and may cover the cost of these lactation services. By working with a lactation consultant, companies can build their own lactation programs that suit the needs of their employees and provide education to their employees.

Breastfeeding support groups that are sponsored by employees can help ease a nursing mother's return to work by providing emotional support and guidance during this transition (Cardenas & Major, 2005). They may also help to identify barriers to breastfeeding in the workplace and provide strategies for overcoming these barriers. It

has been shown that women who participate in breastfeeding support groups, including worksite support groups, breastfeed significantly longer than women who do not (Chezem & Friesen, 1999; Whaley, Meehan, Lange, Slusser, & Jenks, 2002). These types of groups can provide meaningful information to breastfeeding employees and onsite lactation consultants can help facilitate sessions.

2.6.7 Onsite daycare

Women who have on-site or nearby daycare are more successful at continuing to breastfeed after returning to work (Jones & Matheny, 1993; Thompson & Bell, 1997). Having daycare either directly onsite or near the workplace allows mothers to visit their infants during the workday or have their infants brought to them in order to breastfeed. An analysis of 810 mothers who were concurrently working and breastfeeding showed that mothers who breastfed or breastfed and pumped during the work day had longer breastfeeding durations than mothers who only pumped or mothers who did neither (Fein, Mandal, & Roe, 2008). An onsite or nearby daycare center allows mothers to breastfeed during the workday rather than just pump. While onsite daycare centers may be costly, they contribute to increased breastfeeding rates among maternal employees which can lead to decreased infant illnesses and reduced absenteeism costs associated with child care conflicts (Cardenas & Major, 2005). This valuable option may also assist employers' efforts in recruitment and retention of employees.

2.6.8 Flexible schedules

A more indirect way of supporting the continuation of breastfeeding after returning to work for maternal employees is offering flexible schedule options. Flexible scheduling includes options such as part-time return to work (employees that worked full-time prior to a leave can work part-time upon return), telecommuting (working from home or another off-site location), flextime (ability to adjust beginning and end times of the work schedule), and compressed work weeks (working longer hours for fewer days during the week) (SHRM, 2007b). While these options may benefit more than maternal employees, it can assist the latter by allowing them to schedule their work hours around breaks needed to breastfeed or express milk, or to work fewer hours. Flex options that allow a slower return to full-time work provide more time to establish breastfeeding, while other options decrease the total time a mother is away from her infant or allow for more ability to either breastfeed or pump milk. Women who have greater job flexibility take less time off work immediately after childbirth (McGovern, Dowd, Gjerdingen, Moscovice, Kochevar, & Murphy, 2000) which is also a benefit to employers.

In a qualitative study involving working mothers, women identified flexibility in their work schedules as a facilitator for successful continuation of breastfeeding after returning to work (Thompson & Bell, 1997). Research has found that women who work fewer hours after returning to work from maternity leave are more likely to continue breastfeeding since they are separated from their infants for shorter amounts of time (Hills-Bonczyk, Avery, Savik, Potter, & Duckett, 1993; Roe, Whittington, Fein, & Teisl, 1999; Ryan, Wenjun, & Acosta, 2002). Women who are able to work part-time after returning also have the option of going home to breastfeed their infants. Other women

find schedule flexibility important for scheduling breaks to breastfeed or express onsite (Cohen & Mrtek, 1994; Thompson & Bell, 1997). By being able to adjust their work schedules with flexible schedule options, women are able to decrease the time-based conflict of combining breastfeeding and employment.

2.6.9 Framework characterizing formal breastfeeding support

Research identifies and summarizes specific elements important to the successful combination of breastfeeding and employment. Bar-Yam (1998) categorizes the elements as space, time, support, and gatekeepers. Space consists of the areas where a woman is allowed to breastfeed her infant or pump milk; time refers to the amount of time during the workday she needs to be able to breastfeed or pump (including time it takes to get to and from the designated area); support includes the individuals who are supportive of her decision to breastfeed, and; gatekeepers are those in the workplace who ensure the other three elements are helpful for the nursing mother. Dodson, Chee, and Yap (2003) also summarize types of support. They describe supportive elements as being structural, employee-supportive, and organizational. The structural element encompasses designated spaces for nursing mothers as well as equipment for pumping milk; employee-supportive consists of the time required to pump, the nature of her work, and informational resources, and; the organizational element is composed of the workplace administration, supervisors, and colleagues.

Missing from these summaries are maternity leave, flexible scheduling, onsite or referred lactation services, and onsite daycare. These have all been identified in the literature to be important to women who continue breastfeeding after returning to work.

Maternity leave and flexible scheduling appropriately fit into Bar-Yam's time category as they may become necessary to effectively establish and continue breastfeeding, and alter employees' work flow. Lactation services and onsite daycare correspond with Dodson, Chee, and Yap's employee-supportive category as they are tools that help a woman combine breastfeeding and work. Two previous surveys were developed that encompass informal means of company support for breastfeeding. These were the Employee Perceptions of Breastfeeding Support survey (EPBS; Greene & Olson, 2008) and the Manager Attitudes toward Breastfeeding Support (MABS; unpublished). Therefore, the survey developed in this study does not encompass informal organizational characteristics such as attitudes about breastfeeding or support for breastfeeding from individuals at or outside of the work place. The categories of time and structural support are the formal means by which an employer can help support the combination of breastfeeding and employment and were focused on in this study. These two components create a framework (Figure 2) that characterizes formal company breastfeeding support by employers and are the basis for the items included in the survey.

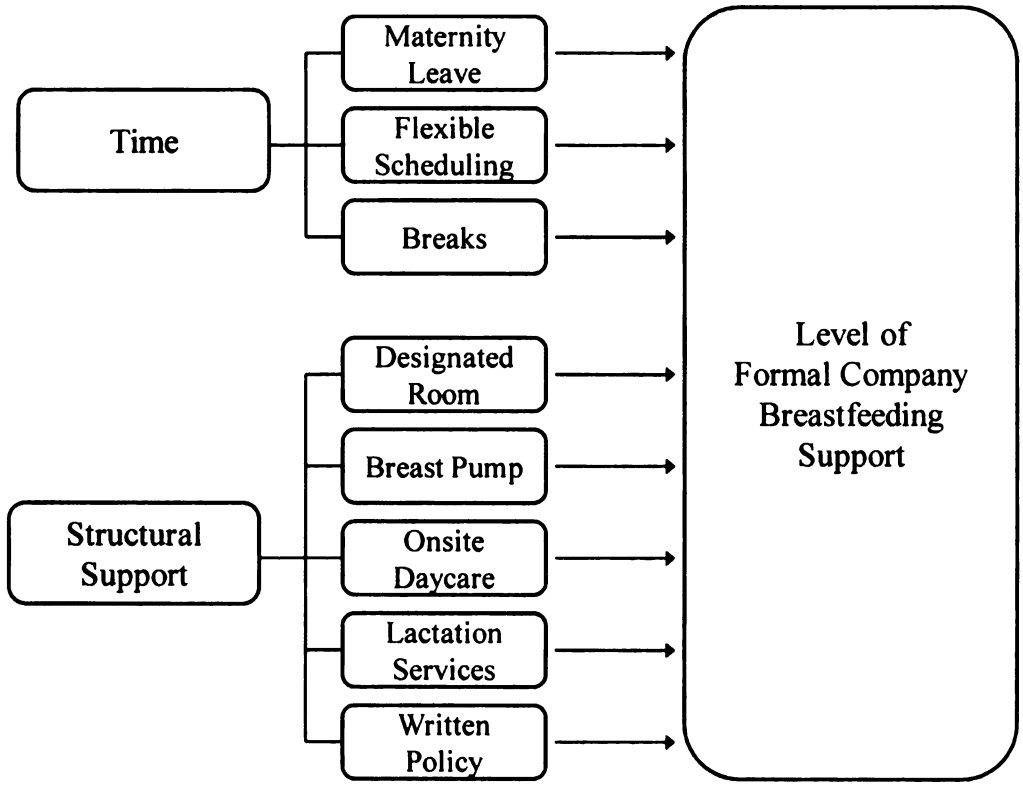


Figure 2. Framework characterizing formal means of company breastfeeding support.

CHAPTER 3

METHODS

The purpose of this research was to develop an instrument that measures company support for breastfeeding at the formal level. The first step was to generate items for the instrument based on a literature review, creation of a framework that characterizes formal breastfeeding supports within companies, and the Tailored Design Method [TDM]. During the instrument development phase, pretesting activities of expert reviews and cognitive interviews were used to strengthen the validity of the measures of the instrument. The instrument was then piloted in Michigan companies meeting specific demographic criteria and by using a multiple contact recruitment method. Descriptive and exploratory analyses of data were performed.

3.1 Item development

Item structure and survey formatting were based on the Tailored Design Method (TDM), which is a method of designing respondent-friendly questionnaires that are clear and salient to the participants, with minimal respondent burden (Dillman, 2000). Items of the instrument were based on a review of the literature and a framework that categorizes formal elements of company breastfeeding support (Figure 2). Items capturing time and structural support concepts of the framework were used for scoring companies' overall level of breastfeeding support. Information on company demographics and the position of the individual completing the survey were collected. Additionally, items regarding family-friendly and wellness benefits, health insurance, and employee demand for

breastfeeding support were included for exploratory data analysis. The completed pilot instrument had 28 items (Appendix A). Seven items on the survey pertaining to the time support component cover: availability of pay during the 12 weeks of leave provided under FMLA; availability of maternity leave longer than the 12 weeks provided under FMLA (either paid or unpaid); the types of flexible scheduling options available for employees at the company; and times during the workday when women are allowed to breastfeed or pump milk. Nine items related to the structural support component encompass: existence of a written policy on breastfeeding or pumping milk at work, and which employees are informed about the policy; company allowance of women to either breastfeed or pump milk at work; space available at the worksite for breastfeeding or pumping mil, and composition of the space; and other lactation support services that are available such as breastfeeding education and electric breast pumps. The next step of the instrument development phase was to strengthen the validity of the measures of the instrument through pretesting activities.

3.2 Pretesting the instrument

Pretesting of the instrument prior to piloting consisted of expert reviews and cognitive interviews. These processes test for comprehension, clarity, ambiguity, and difficulty in responding, and ensure that people can quickly, easily, and confidently answer the questions (Dillman, 2000; Punch, 2003).

The goals of the expert review were to ensure items were comprehensive of the time and structural components of the framework, that all items could be answered by each respondent, and that the overall instrument was clear with minimal respondent

burden. Lactation consultants and individuals with experience working in human resources were recruited to provide reviews of the instrument. In total, nine individuals reviewed the instrument, five of whom were International Board Certified Lactation Consultants (IBCLCs), and four were individuals with corporate work experience in either human resources or a benefits division. All experts were provided with a copy of the survey and a form (Appendix B) for commenting on item clarity, accurate use of business and lactation terms, and whether there was other relevant information not captured by the survey items. The four experts with corporate work experience were also asked to complete the survey as if they had been recruited for the actual study. Because these individuals had access to the information in question in the survey, this allowed the researchers to identify if any of the items were unanswerable due to subject sensitivity, data unavailability, or unclear intent.

After revision of the survey using the comments from the expert review, cognitive interviews were performed. Think-aloud interviewing and verbal probing techniques were used to evaluate whether the items could be consistently interpreted by the subjects and that each item could be answered by all respondents given the answer choices provided (Collins, 2003; Fowler, 2002). Four individuals with human resource experience were used for these interviews, as they represented the target population for piloting. Agreements on changes among the research team were incorporated into the instrument for the pilot study. The study was approved by the Institutional Review Board at Michigan State University.

3.3 Sample demographics

Following item development and refinement, companies were identified to be recruited for participation in a pilot study. Sampling was focused on headquarter and single location companies in Michigan to eliminate possible confounding of multiple states' laws on breastfeeding support at the workplace. Specific business sectors were targeted that previous research suggests are most likely to have a measurable level of breastfeeding support: communication, health care, finance, insurance, real estate, and the public sector. These sectors have been shown to be more likely to offer family-friendly benefits (Evans, 2001; Galinsky & Bond, 1998), and therefore are more likely to have breastfeeding supports in place than other sectors lacking family-friendly benefits.

This instrument will eventually be used in a larger study requiring participation of human resource executives, managers, and women who have recently had a baby while employed in order to assess work climate as a whole. It is essential for companies that will be included in this study to have all of these participants. Using current fertility rates of 69/1000 women being of childbearing years, women composing 46% of the labor force, and an estimate that half of these women would be in their childbearing years, a company of at least 250 employees would be expected to have four female employees giving birth each year (Bureau of Labor Statistics, 2008; Martin, Hamilton, Sutton, Ventura, Menacker, Kirmeyer, et al., 2009), with an additional two pregnant women. Therefore, based on US Census data, companies with at least 250 employees were recruited to participate. In addition, larger companies tend to have more breastfeeding support available (Dunn, Zavela, Cline, & Cost, 2004), which is imperative to test the instrument. Companies with a greater number of employees may also have a greater

demand for breastfeeding support. This demand may increase the salience of the survey to human resource executives, in turn increasing the response rate (Cycyota & Harrison, 2006; Gupta, Shaw, & Delery, 2000; Sudman & Blair, 1999).

Companies were identified using two databases, ReferenceUSA (ReferenceGroup, Inc., http://www.referenceusa.com/) and Direct Media, Inc. (Direct Media, Inc., http://www.directmedia.com/). ReferenceUSA is an online database which provides demographic information about US and international businesses. Direct Media, Inc. is a marketing service company that administers mailing lists for organizations of human resource professionals. Both databases allowed access to contact information of human resource executives at companies meeting the demographic criteria for the pilot test. Each database was accessed in April, 2009, and both databases were used to obtain a larger sample size. It was decided prior to sampling that if companies not meeting these criterion returned surveys, the data obtain would still be used in the data analysis.

The Direct Media, Inc. list provided 865 contact names meeting the criteria for the pilot test. However, there were 621 company duplicates since multiple contact names for some companies were provided, resulting in 244 companies for the sample. A human resource professional at Michigan State University was contacted to help determine, based on positions listed, who would be the best individual to contact from companies providing more than one name. A total of 578 eligible companies were identified through ReferenceUSA, with no company duplicates. There were 15 duplicates between the two databases. The contact information from Direct Media, Inc. was used for these companies since this database is updated more frequently. Additionally, contact information for this

database was provided directly by the listed individuals and was presumed to be more accurate.

After duplicates between the two databases were eliminated, all eligible companies (n=807) were recruited for participation. The expected response rate was expected to be low (Dillman, 2000; Punch, 2003), so all companies were recruited to maximize the likelihood of receiving enough returned surveys to determine the appropriateness of the instrument via completeness, accuracy, and open ended comments, as well as to use in data analyses. Furthermore, all companies were recruited in order to be able to sample from companies with different levels of breastfeeding support in the future study previously explained.

3.4 Company recruitment

Companies were contacted several times during the recruitment stage. This technique is essential for maximizing response rates among company key informants (Dillman, 2000; Sudman & Blair, 1999), since response rates for mail surveys can be especially low (Dillman, 2000; Punch, 2003). A meta-analysis of 231 studies on business executives' response rates to mail surveys reported a mean response rate of 34% (Cycyota & Harrison, 2006). Another study investigating the effects of research procedures on response outcomes among key informants in organizations found a response rate range of 19-71% depending on the procedures utilized (Gupta, Shaw, & Delery, 2000). Therefore, using multiple contacts to recruit participants was crucial in this study. Human resource executives were chosen as the most appropriate recipients as they have the most knowledge about policies, programs, and benefits at their company.

The information in the survey was also most relevant to these individuals which can significantly enhance the response rate and data quality (Cycyota & Harrison, 2006; Gupta, Shaw, & Delery, 2000; Sudman & Blair, 1999).

The first contact was a personalized mailing to the most appropriate human resource executives identified by the databases, and determined in consultation with individuals knowledgeable about human resource personnel structure. If there a human resource executive was not identified, mailings were addressed to the "Chief Human Resource Officer." Included in the mailing was a detailed cover letter (Appendix C) explaining the purpose of the study, the benefit to the company for participating, and how to contact the researchers. A sample report (Appendix D) detailing intended analyses of the study was included as an incentive for companies to participate. This report informed companies they would learn how they scored on breastfeeding support after data analyses, and this would allow them to compare their company's policies and programs with the averages of other participating companies. Finally, a hard copy of the survey was included with a pre-paid return envelope. Participants were notified in the cover letter that an electronic version of the survey could be obtained if they preferred. Using mixed modes of data collection is suggested to obtain cooperation from participants (Dillman, 2000; Sudman & Blair, 1999). Using personalization, first class mail, and pre-paid return envelopes may also increase response rates (Dillman, 2000) and all were utilized during this contact.

The second contact was a telephone call to each executive from one of the research investigators two weeks after the initial mailing. The purpose of this call was to confirm whether or not the survey had been received and to remind individuals of the

benefit to the company for completing the survey. This contact gave researchers the opportunity to provide a replacement survey if the initial one was not received, or to contact a different individual within the company if necessary. This special type of contact has also been shown to improve overall response rates to mail surveys (Dillman, 2000). The phone script used for these calls is in Appendix E.

The third and final contact was a reminder postcard (Appendix F). This reminder was mailed out four weeks after the initial mailing. The postcard briefly summarized the purpose of the study and the benefit to the company for participating. It also provided the contact information of the researchers so companies could obtain either a paper or electronic replacement survey if necessary.

All companies that returned a completed survey were mailed a thank you letter and reminded that they would receive a follow-up report after data analyses were completed.

3.5 Descriptive analysis

Data collected was initially entered into Microsoft Excel by a research assistant, and then double checked by the primary investigator for accuracy. It was then transferred into *PASW Statistics 17* (SPSS Inc., 2008) which was then used to perform all statistical analyses. Descriptive statistics were used for characterizing the sample data. Frequencies were calculated for each policy, program, or benefit related to breastfeeding support. A scoring system was created so that companies received scores for the amount of time and structural support available. The scores for the two support components were summed to assign companies an overall score for formal breastfeeding support (Appendix G). Means

for time, structural, and total breastfeeding support scores were calculated to determine the average level of support offered in the sample. Pearson's correlations were also used to determine the relationships between the variables.

3.6 Exploratory analysis

Because this was a pilot study, exploratory analyses were performed. Results were used to identify how breastfeeding support is distributed among the time and structural support components. The association between the two categories was calculated using Pearson's correlation. This determined if companies receiving a high overall rating were scoring high in both components. The relationship between breastfeeding benefits and other benefits (i.e., family-friendly and wellness benefits) was also determined by calculating a correlation.

An analysis of variance (ANOVA) and multiple linear regressions were performed to determine which company characteristics were associated with greater breastfeeding support. ANOVA was used with categorical and dichotomous independent variables to determine if there were significant differences in the mean breastfeeding support scores between the groups of these variables. Multiple linear regressions were run to establish if any of the continuous or dichotomous independent variables were significant predictors of the dependent variable, total breastfeeding support score.

3.7 Recommendations for revision of the instrument

The final step was to make recommendations for revision of the instrument based on the data and comments received from participating companies. Recommendations

considered elimination of items from or addition of items to the instrument based on non-response rates for individual items and comments mentioning information not covered by any of the current items, respectively. The length of the survey and wording of questions was also considered based on comments from respondents and agreements among researchers.

CHAPTER 4

"DEVELOPMENT AND PILOTING OF AN INSTRUMENT THAT MEASURES COMPANY SUPPORT FOR BREASTFEEDING"

A MANUSCRIPT

4.1 Abstract

Maternal employment has been cited as a barrier to continued breastfeeding, yet there have been very few studies identifying company breastfeeding support. Prior to this study, no instrument was available that could measure the level of company breastfeeding support. The purpose of this study was to develop an instrument that measures formal breastfeeding support in companies. In the study sample, significantly more support was offered in companies having 1,000 or more worksite or U.S. employees and in companies from the health care versus all other sectors. In addition, a higher level of support was found in companies having breastfeeding support requests, upper management that had breastfed or pumped while employed, or an employee population likely to benefit from this type of support. Few companies had written policies on breastfeeding or pumping at work, but the majority indicated they allow women to pump milk at the worksite.

4.2 Introduction

Maternal employment is a cited barrier to reaching national breastfeeding objectives. Mothers employed full-time are as likely to initiate breastfeeding as those who are employed part-time or who do not work outside the home, but on average their duration rate at six months is 10% lower than their counterparts (Ross Products Division,

2003; Ryan, Zhou, & Arensberg, 2006). Fein, Mandal, and Roe (2008) have also shown that breastfeeding intensity, or the proportion of feedings that are breast milk versus other liquids, decreases after women return to work. In their study, the decline in breastfeeding intensity was less for women who had reduced hours of work after return from maternity leave. Therefore, full-time employment not only has an effect on breastfeeding duration, but also on breastfeeding intensity.

The discrepancy in breastfeeding duration among women employed full-time is of concern given the benefits that breastfeeding provides to infant and mother. Infants who are breastfed have decreased incidences and severity of several acute and chronic illnesses (AAP, 2005; ADA, 2009; DHHS, 2000a). Mothers also benefit from breastfeeding as they are more likely to have a faster return to pre-pregnancy weight, and a decreased risk for ovarian and breast cancers compared to women who do not breastfeed (Danforth, Tworoger, Hecht, Rosner, Colditz, & Hankinson, 2007; Dewey, Heinig, & Nommsen, 1993; Ip, Chung, Raman, Chew, Magula, DeVine, et al., 2007; Labbok, 2001).

The percentage of women who enter the workforce is continually increasing. In 2008, 59.5% of all women were part of the labor force, a 12.6% increase since 1998 (DOL, 2009a). Furthermore, 75.4% of women in the workforce in 2008 were employed full-time (DOL,2009a). Of greatest importance, however, is that 56.4% of women with an infant under one year of age were employed this same year (DOL, 2009b). Therefore, over half of mothers with a baby under one year of age are at risk for early cessation of breastfeeding or decreased breastfeeding intensity due to their employment status. It is necessary to understand the workplace climate from the perception of new mother

employees' in order to understand why breastfeeding rates are lower for women employed full time.

Workplace climate has been defined as employees' "shared perceptions of organizational policies, practices, and procedures, both formal and informal" (Schneider, 1990, p.23). Formal means of organizational support include written policies, schedule flexibility, and work-family benefit availability, whereas informal support includes job autonomy, manager support, an organization's ability to communicate respect for employees' non-work lives, and career impact concerns (Behson, 2005). It is essential to understand all of the elements of a workplace, both formal and informal, that a woman perceives to be a barrier to or supportive of combining breastfeeding and employment. An instrument that assesses one form of informal support, manager attitudes towards breastfeeding support, has been developed and is currently being piloted (Chow, Fulmer, & Olson, 2010). Therefore, this study focuses solely on formal means of company breastfeeding support.

Even though formal barriers to and facilitators of combining breastfeeding and employment have been identified, no instrument exists that can measure companies' overall level of formal breastfeeding support. The purpose of this study was to develop an instrument for use in companies that determines the amount of formal breastfeeding support based on the existence of policies, programs, and benefits that may help women combine breastfeeding and employment. This study was approved by the Institutional Review Board at Michigan State University.

4.3 Methods

Items for the instrument were developed based on a literature review of the barriers to and facilitators of combining breastfeeding and employment. From the literature, formal breastfeeding supports were categorized as either time or structural support (Table 2). The completed instrument had 28 items, 16 of which cover breastfeeding support. Seven of these items cover time support, and nine items cover structural support. Additional items regarding family-friendly and wellness benefits, health insurance, employee demand for breastfeeding support, and company demographics were also developed and included for data analysis. Item structure and survey formatting were based on the Tailored Design Method (TDM) (Dillman, 2000).

Prior to piloting, the instrument was pretested using expert reviews and cognitive interviews. The goals of the expert review were to ensure that items were comprehensive of the time and structural components of breastfeeding support, that all items could be answered by a company representative, and that the overall instrument was clear with minimal respondent burden. Nine individuals provided expert review the instrument, five of whom were International Board Certified Lactation Consultants (IBCLCs), and four of whom had corporate work experience in either human resources or a benefits division. All nine experts were provided with a copy of the survey and a form to comment on item clarity, accurate use of business and lactation terms, and whether there was other relevant information not covered by the survey items. The four experts with corporate work experience were also asked to complete the survey as if they had been recruited for the actual study. Because these individuals had access to the information asked for in the

survey, this allowed researchers to identify if any of the items could not be answered due to subject sensitivity, data unavailability, or unclear intent.

After revision of the survey using the comments from the expert review, cognitive interviews were performed. The goals of these interviews were to ensure that each item was interpreted similarly by all individuals and that each item could be answered by all respondents given the answer choices provided. Four individuals with human resource experience were used for the cognitive interviews as they represented the target population for piloting. Following these interviews, the research team discussed and came to agreement on the final changes to make to the instrument before piloting.

Participants for the pilot test were Michigan companies meeting specific demographic criteria. Specific business sectors were targeted that previous research suggests are most likely to have family-friendly benefits, and therefore a measurable level of breastfeeding support (Evans, 2001; Galinsky & Bond, 1998). Sectors included communication, health care, finance, insurance, real estate, and the public sector. These sectors have been shown to be more likely to have family-friendly benefits, and therefore are more likely to have breastfeeding support than other sectors lacking family-friendly benefits.

Companies were identified through the use of two databases, ReferenceUSA (ReferenceGroup, Inc., http://www.referenceusa.com/) and Direct Media, Inc. (Direct Media, Inc., http://www.directmedia.com/). ReferenceUSA, an online directory which provides demographic information about US and Canadian businesses, allowed access to contact information of companies meeting the demographic criteria for the pilot test. This database was accessed in April, 2009. Direct Media, Inc. is a marketing service company

that administers mailing lists for organizations of human resource professionals. A mailing list was customized by Direct Media, Inc. to meet demographic criteria and was also purchased in April, 2009. Both databases were used to obtain a larger sample size.

The Direct Media, Inc. list provided 865 contact names meeting the criteria for the pilot test. However, there were 621 company duplicates since multiple contact names for many companies were provided. A human resource professional assisted in the determination, based on positions listed, of who would be the best individual to contact from companies providing more than one name. A total of 578 eligible companies were identified through ReferenceUSA, with no company duplicates. For the 15 duplicates between the two databases, the contact information from Direct Media, Inc. was used. This database is updated more often and contact information was provided directly by the listed individuals and therefore presumed to be more accurate.

After duplicates between the two databases were eliminated, all eligible companies (n = 807) were recruited for participation. As previous literature suggests that response rates for surveys mailed to companies are typically low (Dillman, 2000; Punch 2003), it was assumed that by sampling all eligible companies, the amount of data collected would be maximized. This was necessary to obtain written comments from participants which would allow for input on what may be missing from the survey, as well as to judge the performance of the survey, and subsequently improve the instrument after piloting.

Companies were contacted several times during the recruitment stage. This technique is essential for maximizing response rates (Dillman, 2000; Sudman & Blair, 1999) as response rates for company surveys can be especially low (Dillman, 2000;

Punch, 2003). Human resource executives were chosen as the most appropriate recipients as they have the most knowledge about policies, programs, and benefits at their company. The information in the survey is also most relevant to these individuals which can significantly enhance the response rate and data quality (Cycyota & Harrison, 2006; Gupta, Shaw, & Delery, 2000; Sudman & Blair, 1999).

The first contact was a personalized, first-class mailing to the human resource executives identified by the databases. If there was no individual identified, but the company still met eligibility criteria, mailings were addressed to the "Chief Human Resource Officer." Included in the mailing was a detailed cover letter explaining the purpose of the study, how to reach the investigators, and the benefit to the company for participating. A sample report detailing intended analyses of the study was included as an incentive for companies to participate. This report informed companies they would learn how they scored on breastfeeding support after data analyses, and that the report would also allow them to compare their company's policies and programs with the averages of other participating companies. Companies were assured that their individual data would only be shared with their company, and that data shared outside of their company would be in aggregate form only. Finally, a hard copy of the survey was included with a pre-paid return envelope. Participants were notified in the cover letter an electronic version of the survey could be obtained if they preferred. First class mail and pre-paid return envelopes were utilized during this contact.

The second contact was a telephone call to each executive from one of the research investigators two weeks after the initial mailing. The purpose of this call was to confirm whether or not the survey had been received and to remind individuals of the

benefit to the company for completing the survey. This contact gave researchers the opportunity to provide a replacement survey if the initial one was not received or to contact a different individual within the company if necessary.

The third and final contact was a reminder postcard. This reminder was mailed out four weeks after the initial mailing. It reiterated the goal of the survey and the benefit to the company for participating. It also gave information on how to obtain either a paper or electronic replacement survey if necessary. All companies that returned a completed survey were mailed a thank you letter and reminded that they would receive a follow-up report after data analyses were completed. Data collected was initially entered into Microsoft Excel by a research assistant, and then double checked by the primary investigator for accuracy. Data was then transferred into *PASW Statistics 17* (SPSS Inc., 2008), which was used to perform all statistical analyses.

A scoring system was created in which companies received scores for the amount of time and structural support available (Table 2). Answers to survey items received a score ranging from zero to two (0 = benefit is not available; 1 = part of benefit is available; 2 = benefit is fully available). If there was more than one survey item per category, the sum of all items was the maximum score for that category. The scores from the time and structural support components were summed to assign companies an overall score for formal breastfeeding support. Means of the component and overall scores were calculated.

Table 2. Scoring system for time, structural, and total breastfeeding support items.

Component	Maximum Possible Score
Time support	**10**
Maternity leave	4
Breaks for breastfeeding or pumping	4
Flexible scheduling	2
Structural support	**16**
Written policy	2
Space for breastfeeding or pumping	4
Lactation consultant	2
Employee support group	2
Educational resources	2
Breast pump	2
On-site day care	2
Total Breastfeeding Support	**26**

Frequencies were run on the different types of breastfeeding support. Means for time, structural, and total breastfeeding support score were calculated. Pearson's correlations were used to show inter-relationships of independent variables, as well as relationships between independent variables and the continuous, dependent variable of total breastfeeding support score. An analysis of variance (ANOVA) was run on the categorical independent variables of number of worksite and U.S. employees (<50, 50-99, 100-499, 500-999, 1,000-4,999, ≥5,000), sector, and headquarters, as well as on the dichotomous independent variables of whether the employee population could benefit from breastfeeding support or not, whether there had been requests for breastfeeding support in the past three years or not, and whether any employees in upper management had previously breastfed or pumped at work or not in order to see if there were any differences between groups on the dependent variable of total breastfeeding score.

Multiple linear regression analyses were also performed to identify whether any of the continuous or dichotomous independent variables were significant predictors of total breastfeeding support score.

4.4 Results

Following the initial mailing, 18 surveys were returned by the post office. Deliverable addresses for these companies could not be identified and were dropped from the sample. Of the remaining 789 companies, 154 returned surveys yielding a response rate of 19.5%. There were two pairs of duplicates which were not initially screened out, and the survey from each pair completed by the least appropriate individual was dropped from analysis. An additional survey had significant missing data and no contact information for follow-up and was also dropped from analysis. The 151 completed surveys used in analysis yielded an adjusted return rate of 19.2%. Ninety-seven companies identified by the ReferenceUSA database responded, and 48 identified by the Direct Media, Inc. database responded. This corresponds to response rates for the lists of 17.2% and 19.7%, respectively. Companies belonged to the industries of communications and marketing (4), education (25), finance (10), health care (42), insurance (8), manufacturing (19), non-profit (4), public administration (25), and other (14).

Frequencies of the reported available breastfeeding supports are displayed in Appendix H. The most commonly offered supports were pay during maternity leave (96%), the ability to pump milk at work (94%), a space other than a restroom for breastfeeding or pumping (78%), and the ability to breastfeed or pump as needed as opposed to during set times only (73%). Few companies offered the remaining lactation-

specific services of access to a lactation consultant (28%), educational material (23%) or classes about breastfeeding or pumping (20%), availability of an electric breast pump (16%) and equipment (12%) onsite, or an employee support group for breastfeeding (7%). Furthermore, only 15% of companies allowed women to directly breastfeed at work.

The mean scores for time, structural, and total breastfeeding support were 6.74 (± 1.91), 3.79 (± 3.42), and 10.5 (± 4.41), respectively. Because maximum possible scores for time and structural support were not equal (10 vs. 16 points, respectively), mean percentages were calculated to standardize and compare the two averages. The mean percentage of time support was 67.4% while the mean percentage of structural support was 23.7%. Therefore, on average, companies offered more time support than structural support for breastfeeding employees. The Pearson's correlation between time and structural support was 0.316 ($P < .01$). Because these measures are positively correlated, it suggests that as a company scores higher on one component of support, they are likely to score higher on the other component as well.

Total breastfeeding support score had significant positive correlations with total family-friendly benefits offered ($r = .464$, $P < .01$) and total wellness benefits offered ($r = .436$, $P < .01$). Therefore, companies offering more family-friendly and wellness benefits were more likely to offer breastfeeding support. The only independent variables that did not have a significant correlation with total breastfeeding support score were sector, whether or not the company was headquarters, the percentage of female employees working full-time, and unionization. All correlations between the independent variables

and the dependent variable of total breastfeeding support score are displayed in Appendix I.

An analysis of variance (ANOVA) showed a significant difference in total breastfeeding support score by number of worksite employees ($F_{5,144} = 9.603$, $P < .01$), and number of U.S. employees ($F_{4,135} = 8.044$, $P < .01$). Means in total breastfeeding score were significantly greater in companies having 1,000 or more worksite or U.S. employees. ANOVA also revealed significantly greater means in total breastfeeding support score when the company reported having an employee population that could benefit from breastfeeding support ($F_{1,127} = 7.799$, $P < .01$), having breastfeeding support requests in the past three years ($F_{1,129} = 10.672$, $P < .01$), and having any employees in upper management who had previously breastfed or pumped at work ($F_{1,108} = 6.359$, $P < .01$). ANOVA revealed no significant differences in mean breastfeeding support score by company sector. However, when sector was dichotomized into the categories of "health care" and "all others", health care had a significantly greater mean breastfeeding support score ($F_{1,149} = 11.569$, $P < .01$). Means for groups within these variables are listed in table 3.

Table 3. Mean scores for total breastfeeding support by variable group.

Independent Variable	Mean score
Number of worksite employees	
<50	8.25
50-99	9.20
100-499	9.41
500-999	10.13
1,000-4,999	13.91
>5,000	16.33
Number of U.S. employees	
<50	5.40
50-499*	9.69
500-999	9.60
1,000-4,999	12.32
>5,000	13.91
Can employee population benefit from breastfeeding support?	
Yes	11.34
No	8.28
Have there been any requests for breastfeeding support in the past 3 years?	
Yes	13.08
No	9.94
Have any employees in upper management previously breastfed or pumped milk at work?	
Yes	11.58
No	9.53
Sector	
Health care	12.40
All others	9.77

*There were only two companies that had 50-99 US employees, therefore were grouped into the 100-499 US employee category for analysis purposes.

A multiple linear regression model including dichotomous and continuous variables was run to determine if any of these variables were significant predictors of

total breastfeeding support score. The dichotomous variables were: whether the employee population could benefit from breastfeeding support or not; whether there had been any breastfeeding support requests in the past three years or not; whether any employees in upper management had previously breastfed or pumped at work or not; and a variable for the number of worksite employees dummy coded for having <1,000 or ≥1,000 employees. The variable for number of U.S. employees was not included in the model due to its collinearity with number of worksite employees. The continuous variables included in the model were total number of family-friendly benefits and percentage of female employees. The variable for total number of wellness benefits was also not included in the model due to its collinearity with total number of family-friendly benefits. This model represents a significant amount of variance in total breastfeeding support score ($F_{5,72} = 5.653$, $P < .01$, $R^2 = 0.320$). Within this model, significant predictors of breastfeeding support score were number of worksite employees ($ß = 0.232$, $P < .05$) and total family-friendly benefits ($ß = 0.228$, $P < .05$). Results of the multiple linear regression model are in Appendix J.

After reviewing the returned surveys, written comments left by respondents indicated difficulty in providing answers for some of the survey items. The largest concern was in the items referring to types of pay that women can receive during FMLA leave time and if extension of this leave beyond 12 weeks is permitted. It is suggested that these items be reworded and broken down into several more items that more clearly capture the concepts. These items should also provide categorical choice options rather than fill-in-the-blank options as the latter often left the opportunity for vague answers or were left blank.

Some items on the survey were open-ended questions as there was not relevant research prior to the creation of the instrument suggesting appropriate answer options to provide. While some respondents did provide comments for these items, the majority of respondents did not. It is suggested that in future use of this instrument, that the comments provided be used to create categorical answer options for these items in order for researchers to run quantitative analyses.

This instrument employed the use of skip patterns multiple times throughout. Although proper use of this technique was followed as instructed by the Tailored Design Method (Dillman, 2000), some respondents did not follow the patterns correctly. This caused confusion in some instances about the data provided. In most cases respondents could be reached for follow-up, however this was not always the case. In order to avoid obtaining potentially inaccurate data due to incorrect use of skip patterns, it is suggested that this technique be removed wherever possible. Rewording and reformatting of some of the survey items would allow for this.

In some instances, companies not meeting the predetermined criteria returned completed surveys. This may have been due to inaccurate identification of company characteristics by the databases, or to forwarding of the survey by the intended recipients to other departments or worksites with different demographics. For the pilot study, researchers decided prior to data collection that if this happened, these surveys would still be used for data analysis. Therefore, the pilot version of the survey included categorical answer options that did not parallel the selection criteria. In future use of this survey, these options may be used as a screening option, or may be eliminated from the survey.

4.5 Discussion

While only a few companies in this study had a written policy on breastfeeding support at the workplace, the majority of companies indicated that they allow women to pump milk while at the worksite. However, few did much more than provide a space other than a restroom for this purpose. In a survey of breastfeeding practices in Colorado businesses (Dunn, Zavela, Cline, & Cost, 2004), only 34% of companies reported having a private area other than a restroom to breastfeed or pump compared to 78% in the current study. In both surveys, the supports offered the least were onsite daycare, provision of electric breast pumps, access to a lactation consultant, educational breastfeeding resources, and written policies on breastfeeding support. Supports that are more lactation-specific are less commonly offered compared to forms of breastfeeding support which are more broadly family-friendly benefits such as paid leave and flexible scheduling.

Further research is necessary to identify why companies with a larger number of employees offer more breastfeeding support. The finding from this study that companies with 1,000 or more employees tended to offer more breastfeeding support are consistent with findings that larger companies are more likely to offer some types family-friendly benefits[18]. However, it needs to be understood if this may be due to larger companies employing more females, having a greater need for this type of support, or having more company resources that would allow them to provide this type of support. Furthermore, it is unknown what type of role having employees in upper management who have breastfed or pumped at work plays in companies offering more breastfeeding support.

Some of the independent variables (i.e., sector, headquarters, percentage of females who are employed full-time, and unionization) were not significantly correlated with total breastfeeding support score. This finding may be due to small sizes in the groups of the variables. For instance, a few studies have shown that companies that are in communication, health care, finance, insurance, real estate, and the public sectors are more likely to have family-friendly benefits (Evans, 2001; Galinsky & Bond, 1998). Because of this, it is assumed they would also likely have more breastfeeding support than companies in other sectors since this support is considered family-friendly. Further studies with larger sample sizes would better determine which company characteristics are most strongly correlated with more breastfeeding support.

Strengths of this study include that this is the first instrument developed to measure the formal level of company breastfeeding support using a scoring system. Furthermore, the instrument is comprehensive of all identifiable breastfeeding-specific supports and family-friendly benefits that would facilitate the combination of breastfeeding and work. This study was the first attempt to identify company breastfeeding supports available in Michigan. Various types of research-tested company and mail survey methodologies were implemented in order to construct an instrument with valid measures and to maximize the response rate including a literature review, expert reviews, cognitive interviews, and multiple contact recruitment.

A major limitation to this study is the low response rate that was achieved. Although it is similar to previous response rates seen among other company surveys (Dillman, 2000; Dunn, Zavela, Cline, & Cost, 2004; Punch, 2003), it is undesirable for making broad conclusions. Furthermore, there is a potential response bias from

companies having breastfeeding supports in place or having an interest in providing breastfeeding support at their company. Therefore, the results found in this study are not representative of breastfeeding support in all Michigan companies.

Another limitation to this study is that only one human resource personnel was asked to complete the survey. It is unknown if the individual completing the survey was the most knowledgeable at the company or if more information could have been collected with more than one person responding. Furthermore, lactation consultants rather than human resource executives often completed the survey for hospitals. While these individuals may be more knowledgeable about lactation-specific services, the data provided for other portions of the survey may not have been as reliable. Further inter-rater reliability testing could be performed in order to strengthen the methodology of having only one individual complete the survey.

Some of the analyses should be interpreted with caution, as sample sizes for some categories within the independent variables were small. For example, a few sectors were composed of very few companies. This could have led to the lack of significance found in the ANOVA results before collapsing the sector variable into "health care" and "all others".

As the percentage of women in the workforce continues to increase, including women with children, it is important that employers provide adequate breastfeeding support to assist in the combination of breastfeeding and employment. States are enacting more legislation requiring employers to accommodate breastfeeding employees (National Conference of State Legislatures, 2009). Creating more workplace support for breastfeeding employees may help these women achieve desirable breastfeeding rates

which provide numerous health benefits for mothers and infants, and can even benefit the workplace (Ball & Bennett, 2001; Ball & Wright, 1999; Cohen & Mrtek, 1994; Cohen, Mrtek, & Mrtek, 1995; Ortiz, McGilligan, & Kelly, 2004; Seijts, 2002). This instrument is also useful for employers as it allows them to assess their level of breastfeeding support. This will enable them to identify what types of support are lacking at their company so they can institute more services that accommodate breastfeeding employees. As a benefit to employers, they can advertise their policies and benefits that are supportive as breastfeeding, as well as their breastfeeding support score, as an employee recruitment and retention tool.

This instrument contributes to the understanding of which company characteristics are associated with varying levels of breastfeeding support, and health care professionals can use it to identify which breastfeeding supports are prevalent or less common in companies. From this information, lactation programs can be better tailored to individual companies or companies with similar characteristics known to have more or less breastfeeding support. The tailored programs can be marketed more effectively to companies, resulting in adoption of more breastfeeding support programs. When the instrument is used in combination with the Employee Perceptions of Breastfeeding Support questionnaire (EPBS) (Greene & Olson, 2008) and the Manager Attitudes toward Breastfeeding Support survey (MABS) (Chow, Fulmer, & Olson, 2010), it will also be helpful in understanding work climate as a whole and which aspects of work climate can be improved to have the greatest impact on breastfeeding rates of working women.

CHAPTER 5

CONCLUSIONS AND DISCUSSION

5.1 Conclusions

While only a few companies in this study had a written policy on breastfeeding support at the workplace, the majority of companies indicated that they allow women to pump milk while at the worksite. However, most did little more than provide a space other than a restroom for this purpose. In a survey of breastfeeding practices in Colorado businesses (Dunn, Zavela, Cline, & Cost, 2004), only 34% of companies reported having a private area other than a restroom to breastfeed or pump compared to 78% in the current study. In both studies, however, the least offered benefits and services were onsite daycare, provision of electric breast pumps, access to a lactation consultant, breastfeeding educational resources, and written policies on breastfeeding support. Therefore, supports that are more lactation-specific are less commonly offered compared to indirect forms of support such as paid leave and flexible scheduling.

For this sample, companies with 1,000 or more worksite or US employees had significantly higher breastfeeding support scores than companies with fewer than 1,000 employees. Companies also had significantly higher breastfeeding support scores if they had an employee population that could benefit from breastfeeding support, if they had breastfeeding support requests in the last three years, or if they had employees in upper management positions who had previously breastfed or pumped milk at work while employed at the company. Additionally, companies from the health care sector had significantly higher breastfeeding support scores when compared to all other industries

combined. The only significant predictors of total breastfeeding support score in this sample were number of worksite employees and total number of family-friendly benefits.

Some of the independent variables (i.e., sector, headquarters, percentage of females who are employed full-time, and unionization) were not significantly correlated with total breastfeeding support score. This finding may be due to small sizes in the groups of the variables. For instance, a few studies have shown that companies that are in communication, health care, finance, insurance, real estate, and the public sectors are more likely to have family-friendly benefits (Evans, 2001; Galinsky & Bond, 1998). Because of this, it is assumed they would also likely have more breastfeeding support than companies in other sectors since this support is considered family-friendly. Further studies with larger sample sizes would better determine which company characteristics are most strongly correlated with more breastfeeding support.

5.2 Implications

As the percentage of women in the workforce continues to increase, including women with children, it is important that employers provide adequate breastfeeding support to assist in the combination of breastfeeding and employment. States are enacting more legislation requiring employers to accommodate breastfeeding employees (National Conference of State Legislatures, 2009). Creating more workplace support for breastfeeding employees may help these women achieve desirable breastfeeding rates which provide numerous health benefits for mothers and infants, and can even benefit the workplace (Ball & Bennett, 2001; Ball & Wright, 1999; Cohen & Mrtek, 1994; Cohen, Mrtek, & Mrtek, 1995; Ortiz, McGilligan, & Kelly, 2004; Seijts, 2002). This instrument

is also useful for employers as it allows them to assess their level of breastfeeding support. This will enable them to identify what types of support are lacking at their company so they can institute more services that accommodate breastfeeding employees. As a benefit to employers, they can advertise their policies and benefits that are supportive as breastfeeding, as well as their breastfeeding support score, as an employee recruitment and retention tool.

This instrument contributes to the understanding of which company characteristics are associated with varying levels of breastfeeding support, and health care professionals can use it to identify which breastfeeding supports are prevalent or less common in companies. From this information, lactation programs can be better tailored to individual companies or companies with similar characteristics known to have more or less breastfeeding support. The tailored programs can be marketed more effectively to companies, resulting in adoption of more breastfeeding support programs. When the instrument is used in combination with the Employee Perceptions of Breastfeeding Support questionnaire (EPBS) (Greene & Olson, 2008) and the Manager Attitudes toward Breastfeeding Support survey (MABS) (Chow, Fulmer, & Olson, 2010), it will also be helpful in understanding work climate as a whole and which aspects of work climate can be improved to have the greatest impact on breastfeeding rates of working women.

5.3 Future research

Further use of this instrument can contribute greater knowledge to the field of breastfeeding and employment. This instrument can be used to measure company breastfeeding scores nation-wide. This will allow the comparison of levels of

breastfeeding support region-to-region or state-to-state. It can also be used to determine if different company characteristics are associated with higher scores of breastfeeding support in different regions of the US. Use of this survey nation-wide could also be used prior to and after enacting legislation requiring employers to accommodate breastfeeding employees. This would determine if legislation alone changes work climates.

It is not fully understood why some companies offer more breastfeeding supports than others. The survey used to quantify breastfeeding practices in Colorado included items addressing incentives and motivation for adopting breastfeeding support (Dunn, Zavela, Cline, & Cost, 2004). Results from the survey indicated that companies with no provision of breastfeeding supports did not perceive a need for these services at their company. Whether there truly was a need within these companies or not is unknown. Incentives most attractive to employers were information on successful breastfeeding support programs in similar companies, information on the benefits of breastfeeding to employers, and tax credits for providing breastfeeding support services. However, motivation for companies that did offer breastfeeding supports is unclear. Additional research using the instrument developed during the current study, along with items similar to the ones from the Colorado survey could help strengthen this understanding.

This instrument should also be used in combination with the EPBS and MABS surveys. When all three surveys are analyzed together, it will allow for greater understanding of work climate from new mother employees' perspectives. This will help better identify what specific aspects of work climate have the most impact on mothers, and what constitutes a good climate that encourages breastfeeding. This is important when incorporating breastfeeding support into the workplace, as it necessary to

implement services that are the most helpful. By understanding which types of support are most important, a weighting system for the overall breastfeeding support score can also be developed to obtain standardized scores. This way, companies with greater breastfeeding support scores may not just have more supports available, but have the supports that are most helpful to breastfeeding employees.

If this instrument were to be used longitudinally in companies with different levels of breastfeeding support, it will lend to the understanding of which types of support influence breastfeeding intensity and duration of employed women. Some studies (CIGNA, 2000; Ortiz, McGilligan, & Kelly, 2004) have shown that companies with various breastfeeding supports do have women that breastfeed at rates comparable to the national averages. However, it is not yet understood which of the supports available are responsible for these rates. By using this instrument first, companies with low amounts of support can be identified. Then, as these companies increase the amount of support offered, it can be determined if these additions increase breastfeeding rates among employees.

Further reliability testing of the survey can also be performed. In order to do this, more than one human resource executive from a single company should complete the survey. The reliability can then be computed between responses that are the same or different between the raters. If reliability is high, this will strengthen the methodology of using only one rater to fill out the survey. If reliability is low for certain items, additional changes could be made to increase accuracy.

APPENDICES

APPENDIX A

PILOT INSTRUMENT

BESt: Breastfeeding & Employment Study
Company Policies and Programs

SURVEY

Instructions:

- Please answer the questions in this survey as they pertain to **full-time** employees at your location.
- Provide only one answer per question, unless instructed to do otherwise.

Terms:

- "Breastfeeding" refers to women directly nursing their infants or young children from the breast.
- "Pumping" refers to women pumping breast milk either by hand expression, or by using a manual or electric pump, and storing it for later use.

Breastfeeding Policy

1. Does your company have a written policy on breastfeeding and/or pumping milk at work?

   ❑ Yes

   [Please attach a copy of the policy if possible, and continue with Question #2]

   ❑ No

   [If your company does not have a policy, skip to Question #3]

2. a) Are <u>all</u> employees informed about this policy (e.g., when hired, at orientation, etc.)?

   ❑ Yes

   ❑ No

   b) Are employees who become pregnant informed about this policy?

   ❑ Yes

   ❑ No

3. Does this company have a Corporate Lactation Program?

   ❑ Yes **[Please attach a written description of this program if possible]**

   ❑ No

Breastfeeding Support Needs

4. Please answer the following questions:	Yes	No	Don't Know
a) Does this company have an employee population that may desire or benefit from policies or programs pertaining to breastfeeding or pumping milk at work?	❑	❑	❑
b) In the past two years have there been any requests from employees or managers for policies or programs allowing breastfeeding or pumping milk at work to be created?	❑	❑	❑
c) Have any female employees in upper management (e.g., executives, vice presidents, or senior-level staff including senior-level HR personnel) breastfed or pumped milk at work while employed with this organization?	❑	❑	❑

Maternity Leave

5. During the 12 weeks provided under the Family and Medical Leave Act (FMLA), can women receive pay for any period of the time?

   ❑ Yes

   ❑ No

   [IF NO, skip to Question #7]

6. Please indicate which of the following types of pay are available to use during the 12 weeks provided under FMLA:
   [Please check all that apply]

   ❑ Disability pay → **IF YES:**
   What percentage of pay do employees receive? _____%
   How long do employees receive this pay? _____

   ❑ Company leave → **IF YES:**
   What percentage of pay do employees receive? _____%
   How long do employees receive this pay? _____

   ❑ Earned time off (e.g., vacation time, sick time, personal days)

   ❑ Other (please describe):

   _____

   _____

   _____

7. Does this company allow women to extend their maternity leave longer than the 12 weeks provided under FMLA?

   ❑ Yes

   ❑ No

   [IF NO, skip to Question #9 on the next page]

8. a) Please describe any paid time that can be used to extend maternity leave (e.g., banked time off, etc.):

   _____

   _____

   b) Please describe any unpaid time that can be used to extend this leave:

   _____

   _____

9. Please include any comments you have regarding maternity leave here:

_____

_____

_____

_____

_____

Breastfeeding and Pumping Milk at Work

10. Does this company allow women to bring their infants to work to breastfeed them?

- ❑ Yes
- ❑ No

11. Does this company allow women to pump milk at work?

- ❑ Yes
- ❑ No → **[IF NO, skip to Question #15 on page 6]**

12. When women breastfeed or pump milk at work, when are they allowed to do so? **[Please check all that apply]**

- ❑ During set break times
- ❑ As needed
- ❑ During lunch

13. Please answer the following questions:	Yes	No
a) Is space available at work to breastfeed or pump milk? **[IF NO, skip to Question #15 on page 7]**	❑	❑
b) Are restrooms the only spaces available for breastfeeding or pumping milk? **[IF YES, skip to Question #15 on page 7]**	❑	❑

14. Please answer the following questions about space available for breastfeeding or pumping milk:	Yes	No
a) Is there any designated space where women are allowed to breastfeed or pump milk when not being used for other purposes (e.g., a conference room)? **IF YES:** How many? _____	❑	❑
b) Is there any space dedicated **solely** to breastfeeding or pumping milk? **IF YES:** How many? _____	❑	❑
c) Are any of the following available in the spaces where women can breastfeed or pump milk (do not include restrooms)?		
Locking door	❑	❑
Chair	❑	❑
Electrical outlet	❑	❑
Table	❑	❑
Sink	❑	❑
Refrigerator (either in or near the room and storage of breast milk is allowed)	❑	❑

Please add any additional comments you may have about space available for breastfeeding or pumping milk:

_____

_____

_____

_____

Lactation Services and Breastfeeding Support

15. Are any of these services available at your company? **[Please provide only <u>one</u> answer for each service]**	Yes, this is available; the company <u>pays at least some</u> of the cost	Yes, this is available; the company <u>does not pay any</u> of the cost	No, this is not available
a) Access to a Lactation Consultant (either onsite or through a referral service)	❑	❑	❑
b) Employee support group for breastfeeding	❑	❑	❑
c) Educational classes that include information on breastfeeding or pumping	❑	❑	❑
d) Educational materials/handouts on breastfeeding or pumping (Please provide copies of any materials if possible)	❑	❑	❑
e) Electric breast pump	❑	❑	❑
f) Kit for pumping (e.g., tubing, etc.)	❑	❑	❑

Please describe how <u>managers</u> are made aware of any available lactation services or breastfeeding support:

_____

_____

_____

_____

_____

_____

NOTE: The remaining questions in this survey pertain to ALL full-time employees at this location (not just women).

Flexible Scheduling

16. Are any of these flexible scheduling options available to full-time employees at your company?	Yes, this is available	No, this is not available
a) Earned time off: Employees take these days at their own discretion (e.g., sick leave, vacation time, and personal days are grouped into one set of paid days off).	❑	❑
b) Part-time return: Employees who worked full-time before a leave can permanently return to work for less than 35 hours per week. Benefits are usually prorated to hours worked.	❑	❑
c) Phase back: Employees return from leave to full-time workload gradually over several weeks or months.	❑	❑
d) Flextime: Employees arrange to work hours to suit their schedules. Arrival, departure, or meal/break times may be adjusted (e.g., 7am-3pm, or 10am-6pm).	❑	❑
e) Compressed workweek: Employees work longer hours on fewer days (e.g., 10 hours/day for 4 days/week).	❑	❑
f) Telecommuting: Employees work at home or another offsite location one or more days a week.	❑	❑
g) Job sharing: Two or more employees all work part-time and share the responsibilities and compensation/benefits of one full-time job.	❑	❑

Family-Friendly Benefits

17. Are any of these family-friendly benefits available to full-time employees at your company?	Yes, this is available	No, this is not available
a) Dependent care flexible spending account: Spending account that allows employees to set aside pretax dollars that can later be used for dependent care expenses (e.g., for daycare)	❑	❑
b) Bring child to work in an emergency	❑	❑
c) Health care benefits for dependent grandchildren	❑	❑
d) Domestic partner benefits: May include opposite-sex partners or other eligible individuals	❑	❑
e) Eldercare referral service	❑	❑
f) Childcare referral service	❑	❑
g) Adoption assistance: Helps employees pay for an adoption and related expenses.	❑	❑
h) On-site licensed daycare	❑	❑
i) Educational assistance for employees and their family members (e.g., scholarships, tuition reimbursement, and loans)	❑	❑

Please describe any other family-friendly benefits you offer:

_____

_____

_____

_____

Wellness Benefits

18. Are any of these wellness benefits available to full-time employees at your company?	Yes, this is available	No, this is not available
a) Employee Assistance Program: Counseling service for employees and their families who may be experiencing personal or work related problems.	❑	❑
b) Medical flexible spending account: Spending account that allows employees to deduct pretax dollars from their paychecks to use to pay for health care expenses.	❑	❑
c) Wellness/preventive health program: Includes resources and information for employees that help maintain or improve health and prevent the development of serious health conditions in the future (e.g., nutrition education).	❑	❑
d) CPR/first aid training	❑	❑
e) Health screening program (e.g., screenings for cholesterol, blood pressure, etc.)	❑	❑
f) Smoking cessation classes	❑	❑
g) Employer-subsidized/reimbursed gym memberships, or on-site fitness center	❑	❑
h) On-site vaccinations (e.g., flu shots)	❑	❑
i) Weight loss/control program	❑	❑
j) Work/life newsletter/column	❑	❑

Please describe any other wellness programs you offer:

_____

_____

19. Please describe how managers are made aware of flexible scheduling options, family-friendly benefits, and wellness benefits:

_____

_____

_____

_____

20. At your company, would breastfeeding support be best described as a family-friendly benefit or a wellness benefit?

[Please choose only one]

- ❑ Family-friendly benefit
- ❑ Wellness benefit

Health Insurance

21. Does your company offer health insurance to full-time employees?

- ❑ Yes
- ❑ No ⟶

[IF NO, skip to Question #23 on the next page]

22. a) Please indicate what types of insurance are offered at your company:

[Please check all that apply]

- ❑ Medical
- ❑ Dental

b) Does this company cover any of the cost of medical insurance?

- ❑ Yes
- ❑ No

c) Please add any additional comments you may have (e.g., what is included in full-time employees' health insurance packages, what percentage of insurance is covered by the company, etc.):

_____

_____

_____

_____

Company Information

Reminder: Any information identifying the company or individual filling out the survey will be kept confidential.

23. Please provide the following information about the company you work for and the contact information of the person completing the survey:

Company name: _____

Worksite address: _____

Corporate website address: _____

Name of person completing the survey: _____

Position: _____

Telephone: _____

Email address: _____ Date: ____/____/_____

24. Is this site corporate headquarters?

- ❑ Yes
- ❑ No

IF NO:
How much ability does management at this site have to customize or adapt human resource policies and practices to reflect local conditions/demands, versus having to adhere to centralized policies and procedures?

- ❑ No ability (must adhere to centralized policies from corporate headquarters)
- ❑ Some ability (usually need approval from corporate headquarters)
- ❑ Complete ability (without necessarily obtaining approval from corporate headquarters)

25. Is this organization a subsidiary of another organization?

- ❑ Yes
- ❑ No → **[IF NO, skip to Question #26 on the next page]**

IF YES:
Parent company name: _____

Parent company address: _____

_____

Parent company website address: _____

26. Which of the following best describes your organization's primary industry?
[Please choose only one]

- ❑ Communications
- ❑ Finance
- ❑ Health Care
- ❑ Insurance
- ❑ Public Administration
- ❑ Public Education
- ❑ Real Estate
- ❑ Utilities
- ❑ Other (please specify):

_____

27. Which of the following best describes the physical layout of this worksite?

- ❑ A single building
- ❑ Multiple buildings, each within walking distance of each other
- ❑ Multiple buildings, not within walking distance of each other
- ❑ Other (please describe):

_____
_____
_____

28. Please provide:

a) How many workers are employed at this company?

At this worksite:	In the US:	Globally:
❑ < 50	❑ < 50	❑ < 50
❑ 50 – 99	❑ 50 – 99	❑ 50 – 99
❑ 100 – 499	❑ 100 – 499	❑ 100 – 499
❑ 500 – 999	❑ 500 – 999	❑ 500 – 999
❑ 1,000 – 4,999	❑ 1,000 – 4,999	❑ 1,000 – 4,999
❑ > 5,000	❑ > 5,000	❑ > 5,000

b) Of all US employees, what percentage is female? . . . . . _____%

c) Of all US employees, what percentage of females are employed full-time?. . . . . _____%

d) Of all US employees, what percentage of workers is unionized? . . . . . _____%

Thank you for taking the time to complete this survey. Please use this space to include any additional comments you may have.

APPENDIX B

EXPERT REVIEW COMMENT FORM

Your Name (please include credentials): _____

Employer: _____

Position: _____

Question #	Please check the box in this column if you do not have any comments/suggestions on the corresponding question:	Please give any comments/suggestions for the corresponding question in this column:
1	❑ No comments for this question	
2	□ No comments for this question	
3	□ No comments for this question	
4	□ No comments for this question	
5	□ No comments for this question	

6	□ No comments for this question	
7	□ No comments for this question	
8	□ No comments for this question	
9	□ No comments for this question	
10	□ No comments for this question	
11	□ No comments for this question	
12	□ No comments for this question	
13	□ No comments for this question	
14	□ No comments for this question	

15	□ No comments for this question	
16	□ No comments for this question	
17	□ No comments for this question	
18	□ No comments for this question	
19	□ No comments for this question	
20	□ No comments for this question	
21	□ No comments for this question	
22	□ No comments for this question	

23	□ No comments for this question	
24	□ No comments for this question	
25	□ No comments for this question	
26	□ No comments for this question	
27	□ No comments for this question	
28	□ No comments for this question	
29	□ No comments for this question	
30	□ No comments for this question	
31	□ No comments for this question	

Additional Questions concerning the completion of the survey:

1) How long did it take you to complete this survey?

2) Please comment on the difficulty of this survey (i.e. was it time consuming or difficult to find any of the information asked for?)

3) When asked how many employees use the different policies or programs mentioned in this survey, how feasible was it to provide an approximate percentage?

4) For female employees only, how feasible was it to report an average age and percentages within the given age ranges?

5) Please refer to question #13 in the survey. This question is getting at whether or not women are able to extend maternity leave beyond FMLA requirements by using any other leave time available. Do you feel this question accurately captures this? Are there any additional items you would add to this list that may be used?

6) Please refer to question #18 in the survey. If companies already have some breastfeeding policies, we would like them to appropriately identify which they are categorized as. If they do not, or the policies are not clearly defined as one or the other, we would like them to identify under which category these policies best fit. Do you have any suggestions on the wording of this question?

APPENDIX C

COVER LETTER FOR INITIAL CONTACT

Name, Credentials
Company Name
Address
City, ST Zip

<DATE>

Dear _____,

Your company has been selected to participate in the Breastfeeding & Employment Study (BESt). As the <Human Resource Director>, you were identified as the most appropriate individual at your company to answer questions about policies and programs that may support breastfeeding employees. We are asking that you complete the enclosed survey, or if you wish, email us at bfproject@anr.msu.edu to receive an electronic version to complete and email back to us. If you do not feel you are the most appropriate individual to complete this survey, please forward it to the appropriate person.

The BESt research study is being conducted by Michigan State University and is funded by the United States Department of Agriculture (USDA) National Research Initiative. The objective of the study is to determine the best support that may be provided to employees wishing to combine breastfeeding and employment. The goal of this survey is to determine the types of support that are available in Michigan companies with more than 250 employees.

After data collection and analyses are complete, you will receive an individualized follow-up report that will allow you to compare your company's policies and programs with other companies in Michigan. Your results will only be shared with your company. Results from all participating companies will only be presented in collective form. The information from the study results may be helpful to your company as a recruiting and retention tool.

All of the company data that is provided in the survey responses will be kept confidential. Only the researchers will have access to the individual company data. No personal or company identifiers will appear in presentations or publications of the study results.

Participation in completing this survey is completely voluntary and you may stop at any time or not answer certain questions. There are no anticipated risks for completing the survey, and the benefit of completing it is the ability to compare your results with other companies in Michigan. The estimated time to complete this survey is 30 minutes. By

completing and returning the survey, you indicate your voluntary agreement to participate.
If your company has more than one location, please complete the survey **only for the location identified below:**

Company Name: <Name>
Address: <Address>
<City, ST Zip>

If you have questions about this study or completing the survey, please contact the research investigators at bfproject@anr.msu.edu, or at 517-355-8474 extension 154.

Thank you for your time and participation in this research project.

Sincerely,

Beth Olson, PhD
Primary Investigator
Food Science and Human Nutrition
Michigan State University

Sarah Hojnacki
Project Manager
Food Science and Human Nutrition
Michigan State University

Don Conlon, PhD
Co-Investigator
Department of Management,
Eli Broad College of Business
Michigan State University

Ingrid Fulmer, PhD
Co-Investigator
College of Management
Georgia Institute of Technology

APPENDIX D

SAMPLE REPORT

BESt: Breastfeeding & Employment Study
Company Policies and Programs in Michigan

A Sample of the Follow-up Report

This research is being conducted through Michigan State University.

Funding is provided by the United States Department of Agriculture.

What will be included in the follow-up report:

- Information on the survey and the scoring system
- Your company's overall score and sub-scores for individual categories
- Overall scores and sub-scores for all companies and for companies of similar size to yours
- Resources on how to incorporate breastfeeding support at the workplace

For questions or comments contact:
Beth Olson, PhD
517-355-8474 x113
olsonbe@anr.msu.edu

BESt: Breastfeeding & Employment Study

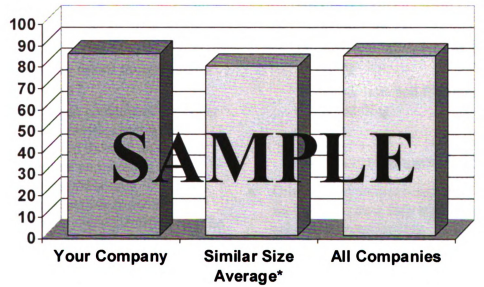
Company Policies and Programs in Michigan

SAMPLE REPORT

About this report:

This is a sample of the follow-up report that will be mailed to your company after completion and analysis of this study. The survey is being used to collect information on company policies and programs that provide support for combining breastfeeding and employment. Your individual company scores will only be reported to your company. Scores for other companies will be reported as a group average.

Composite Scores for the 2009 BESt Survey



*The average for companies with a similar employee size will be reported

Benefits to Companies

Research has shown that having policies and programs supportive of breastfeeding practices can provide many benefits to employers.

A summary of these benefits will be provided in the follow-up report along with literature references.

What will be in the follow-up report?

- Information on the survey questions and scoring system
- Composite scores and sub-scores of survey components for:
  - Your company
  - Companies of similar size
  - All companies
- Resources on breastfeeding support at the workplace

Who is being asked to participate in this survey?

- Michigan companies with over 250 employees that were identified through an online database and mailing list
- A human resource representative from each company was identified and the survey was mailed to that individual
- Industry sectors include communication, education, health care, finance, real estate, insurance, public administration, and utilities
- The survey response rate will be reported in the follow-up report

What are the survey components?

- Based on previous research, the availability of the following at the workplace have been shown to help mothers combine breastfeeding and employment:

I. Company policies
II. Maternity and paid leaves
III. Corporate lactation programs
IV. Space to breastfeed or pump
V. Break time and flexible scheduling
VI. Lactation services

- Other survey components are included because they may be related to breastfeeding support. These components include:

I. Family-friendly benefits
II. Wellness benefits
III. Health insurance
IV. Employee characteristics

How will the survey be scored?

- Each question is part of a survey component. A score will be assigned to each question based on your response and added to the sub-score for that component.
- Component sub-scores will be totaled to obtain a composite score.
- Scores will be presented in a similar fashion to the table below.

Composite and Sub-scores from the 2009 BESt Survey of Michigan Companies

	Your Company	Companies of Similar Size	All Companies
Composite Score			
Component Sub Scores: Company policy			
Maternity and paid leaves			
Corporate lactation program			
Space for breastfeeding and/or pumping			
Break time			
Flexible scheduling			
Lactation services			
Family-friendly benefits			

The Survey Components

The follow-up report will include a summary of the survey questions, rationale for including them in the survey, and the response you provided. They will be presented in a similar format as this table:

I. Company policy *Rationale*:	
Question:	*Your Response:*
II. Maternity Leave *Rationale*:	
Question:	*Your Response:*
III. Corporate lactation program *Rationale*:	
Question:	*Your Response:*
IV. Space to breastfeed or pump *Rationale*:	
Question:	*Your Response:*
V. Break time and flexible scheduling *Rationale*:	
Question:	*Your Response:*
VI. Lactation Services *Rationale*:	
Question:	*Your Response:*
V. Family-friendly benefits *Rationale*:	
Question:	*Your Response:*

Breastfeeding Support Examples

The follow-up report will include examples of breastfeeding support options categorized into different levels. They will be presented in a similar format as below.

Lactation Program Options		
Good	**Better**	**Best**

Lactation Room Options		
Good	**Better**	**Best**

Education Options		
Good	**Better**	**Best**

Support Group Options		
Good	**Better**	**Best**

Additional Resources

The follow-up report will include additional resources on incorporating breastfeeding support at the workplace.

APPENDIX E

PHONE SCRIPT FOR SECOND CONTACT

Phone Script for Company Survey Recruitment
Use <u>after</u> Survey Mailings

This screening call will be made to all companies identified through the ReferenceUSA database and DirectMedia mailing list after mailing of the survey has begun. The intent is to ensure the survey has been mailed to the most appropriate individual to complete it. The calls will:

1. Obtain the name and contact information of the Human Resource Director or person in a similar position.
2. Inform the individual of the survey mailing and benefits to the company for completing it.

Call instructions for companies <u>with</u> a human resource contact listed:

1. Hello. I am calling for <Contact Name>.

   If this employee no longer works for the company, ask to be directed to the Human Resource Director and follow the screening guide for companies without a contact listed.

   After being connected:
   Hello, my name is <Screener Name>. I am with a research team from Michigan State University's Department of Human Nutrition and Eli Broad School of Business. We are conducting a USDA National Research Initiative-funded study of company policies and programs that may support new mother employees who wish to combine breastfeeding and work. Your company has been mailed a survey and I am calling to confirm whether you have received the survey and the most appropriate person to complete it. Upon completion of this study, an individualized follow-up report will be mailed to your company, which will allow you to compare your company's policies with other companies in Michigan. We hope you will find the information helpful to your company as a recruiting and retention tool.

2. Are you the Human Resource Director or in a similar position, and the most appropriate person to complete the survey?
   - ❑ Yes
   - ❑ No

   IF YES, confirm their name and contact information and record below.

IF NO, ask for the name and contact information of the human resource director and record here:

Name: _____

Title: _____

Address: _____

3. Have you received the survey?

   ❑ Yes
   ❑ No

IF NO, indicate you will send the survey to their address above.

I would like to thank you for your time and help today and look forward to receiving your completed survey. My contact information is on the cover letter and should you have any questions please feel free to call me.

Call instructions for companies <u>without</u> a contact listed:

1. Hello. May I please be connected with the Human Resource Director?

   If you are connected to this person, continue with part 3.

   If this is not possible, continue with:
   Hello, my name is <Screener Name>. I am with a research team from Michigan State University's Department of Human Nutrition and Eli Broad School of Business. We are conducting a USDA National Research Initiative-funded study of company policies and programs that may support new mother employees who wish to combine breastfeeding and work. Your company has been mailed a survey and I am calling to confirm whether it has been received and who the most appropriate person to complete it is. Upon completion of this study, an individualized follow-up report will be mailed to your company, which will allow you to compare your company's policies with other companies in Michigan. We hope you will find the information helpful to your company as a recruiting and retention tool.

   We would like to make sure the survey reaches the Human Resource Director or someone in a similar position. I am hoping you can help me identify who this would be.

Record name, position, and address here:

Name: _____

Title: _____

Address: _____

_____

2. Are you aware whether or not the survey has been received?
   - ❑ Yes
   - ❑ No

   IF NO, indicate that a copy will be mailed to the address that was provided.

Conclude by saying:
I would like to thank you for your time and help today and look forward to receiving your completed survey. My contact information is on the cover letter and should you have any questions please feel free to call me.

3. *After being connected to the Human Resource Director, continue with:*
   Hello, my name is <Screener Name>. I am with a research team from Michigan State University's Department of Human Nutrition and Eli Broad School of Business. We are conducting a USDA National Research Initiative-funded study of company policies and programs that may support new mother employees who wish to combine breastfeeding and work. Your company has been mailed a survey and I am calling to confirm whether you have received the survey and the most appropriate person to complete it. Upon completion of this study, an individualized follow-up report will be mailed to your company, which will allow you to compare your company's policies with other companies in Michigan. We hope you will find the information helpful to your company as a recruiting and retention tool.

   Are you the Human Resource Director or in a similar position, and the most appropriate person to complete the survey?
   - ❑ Yes
   - ❑ No

   IF YES, confirm their name and contact information and record below.
   IF NO, ask for the name and contact information of the human resource director and record here:

Name: _____

Title: _____

Address: _____

_____

Conclude by saying:
I would like to thank you for your time and help today and look forward to receiving your completed survey. My contact information is on the cover letter and should you have any questions please feel free to call me.

APPENDIX F

REMINDER POSTCARD FOR THIRD CONTACT

FRONT:

Breastfeeding & Employment Study
Michigan State University
2125 S. Anthony
East Lansing, MI 48823

BACK:

This is a reminder to please complete and return the Breastfeeding & Employment Study survey that was mailed to you a couple weeks ago. The objective of this study is to determine the best support that may be provided to employees wishing to combine breastfeeding and employment. The goal of this survey is to determine the types of support that are available in Michigan companies.

After data collection and analyses are complete, you will receive an individualized follow-up report that will allow you to compare your company's policies and programs with other companies in Michigan. Your company may benefit from the results as a retention and recruitment tool.

If you need a replacement survey or have any questions about this study, please contact the research investigators at brproject@anr.msu.edu, or at 517-355-8474 x 154.

Thank you for your time and participation.

APPENDIX G

TABLE 4. SCORING SYSTEM FOR FORMAL BREASTFEEDING SUPPORT

Component	Maximum Score Possible	Scoring Description*
Time support	**10**	Scores for categories falling under time support were summed
Maternity leave	4	1 = **Only** earned time off can be used to receive pay during FMLA 2 = Disability pay or a company leave can be used to receive pay during FMLA (may also be able to use earned time off) 1 = Maternity leave may be extended beyond 12 weeks, but is unpaid 2 = Maternity leave may be extended beyond 12 weeks, and is paid
Breastfeeding & pumping at work	4	1 = Women may pump milk at work 1 = Women may breastfeed at work 1 = Women many breastfeed or pump during set break times **only** 2 = Women may breastfeed or pump as needed
Flexible scheduling	2	1 = Part-time return, phase back, **or** job sharing is available 1 = Flextime, compressed workweek, **or** telecommuting is available
Structural support	**16**	Scores for categories falling under structural support were summed

Written policy education	2	1 = There is a written policy on breastfeeding and/or pumping milk at work and **only** pregnant employees are informed about it 2 = There is a written policy on breastfeeding and/or pumping milk at work and **all** employees are informed about it
Space to breastfeed or pump	4	1 = There is space, other than a restroom, available at work for women to breastfeed or pump 1 = There is a space dedicated solely to breastfeeding or pumping 1 = Spaces have some, but not all of the following: locking door, chair, or electrical outlet 2 = Spaces have all of the following: locking door, chair, and electrical outlet
Lactation consultant	2	1 = There is access to a lactation consultant (either onsite or through a referral service) 1 = The lactation consultant is at least partially paid for by the company
Employee support group	2	1 = There is an employee support group for breastfeeding 1 = The support group is at least partially paid for by the company
Education	2	1 = There are educational classes **or** education materials/handouts on breastfeeding or pumping 1 = The educational resources are at least partially paid for by the company
Breast pump	2	1 = There is an electrical breast pump available to use at work 1 = The breast pump is at least partially paid for by the company
On-site daycare	2	2 = There is an on-site, licensed daycare at the worksite
TOTAL SCORE	**26**	Scores for the time and structural support components were summed

APPENDIX H

TABLE 5. PREVALENCE OF BREASTFEEDING SUPPORTS

Type of support, breastfeeding-specific	Total N = 151		
	N offering service/ benefit	**Total N completing item**	**%**
Written policy on breastfeeding support	5	151	3
All employees are informed of policy	2	5[a]	40
Pregnant employees are informed of policy	5	5[a]	100
Pay during maternity leave	145	151	96
Disability pay	111	145[a]	77
Company pay	13	145[a]	9
Earned time off (e.g., vacation, sick time)	136	145[a]	94
Ability to extend maternity leave beyond FMLA	85	151	56
Allowed to breastfeed at work	22	143[b]	15
Allowed to pump at work	141	150[b]	94
Breastfeed/pump as needed (vs. set breaks only)	101	139[a,b]	73
Space other than restroom available for breastfeeding/pumping	106	136[a,b]	78
Room dedicated solely to breastfeeding/pumping	34	106[a]	32
Spaces[c] for breastfeeding/pumping include:			
Locking door	91	103[a,b]	88
Chair	104	104[a,b]	100
Electrical outlet	104	104[a,b]	100
Sink	55	96[a,b]	57
Refrigerator (in or near room; storage of breast milk allowed)	82	101[a,b]	81

Access to lactation consultant	42	149[b]	28
At least partially paid for by company	23	42[a]	55
Employee support group	11	151	7
At least partially paid for by company	7	11[a]	64
Educational classes	30	151	20
At least partially paid for by company	14	30[a]	47
Educational material	34	150[b]	23
At least partially paid for by company	25	34[a]	74
Availability of an electric breast pump	24	151	16
At least partially paid for by company	19	24[a]	79
Availability of breast pump kit	18	149[b]	12
At least partially paid for by company	12	18[a]	67
Type of support, non-specific to breastfeeding			
Onsite daycare	22	151	15
Flextime	92	151	61
Telecommuting	53	151	35
Compressed workweek	79	151	52
Job sharing	40	151	27
Phase back	72	151	48
Part-time return	77	151	51

[a]N<151 due to some companies being directed not to answer the question

[b]N<151 due to missing data

[c]Refers to any space other than a restroom available for breastfeeding/pumping (not just spaces dedicated solely to breastfeeding/pumping)

APPENDIX I

TABLE 6. CORRELATIONS BETWEEN INDEPENDENT VARIABLES AND THE DEPENDENT VARIABLE, TOTAL BREASTFEEDING SUPPORT SCORE

Independent Variable	Pearson's r	P-value
# of family-friendly benefits	.464	.000**
# wellness benefits	.436	.000**
Unionization	.005	.949
% female workers	.185	.039*
% full-time females	.108	.252
# worksite employees	.319	.024*
# U.S. employees	.416	.000**
Sector	.103	.209
Breastfeeding requests	.276	.001**
Employee demand	.241	.006**
Upper management has breastfed/pumped	.236	.013*
Headquarters	.030	.712

*P < .05
**P < .01

APPENDIX J

TABLE 7. MULTIPLE LINEAR REGRESSION MODEL

Dependent variable: Total Breastfeeding Support Score
$R^2 = .320$, $F_{5,72} = 5.653$, $P<.01$

Independent Variable	ß	P-value
# worksite employees	.232	.041*
# family-friendly benefits	.228	.049*
% female employees	.097	.365
Breastfeeding requests	.127	.223
Employee demand	.117	.272
Upper management has breastfed/pumped	.143	.190

*P < .05

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