Eat At Mom's: Critiquing and Rebuilding The Breastfeeding Paradigm

by

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Abstract

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For the past three decades breastfeeding has been globally promoted as the ideal method of infant feeding with policy makers defining breastfeeding and shaping the current breastfeeding paradigm with their recommendations that often leave out the voices of nursing women. We believe that the voices of mothers and their infants can be a valuable source of information to balance this discrepancy and offer suggestions to changing the current model of breastfeeding education to better match their specific needs. One hundred and twenty-seven first time mothers (FTM) committed to breastfeeding were recruited from popular online communities that focus on pregnancy and parenting for a mixed methodology study on breastfeeding views. Participants completed a series of quantitative measures consisting of the Iowa Infant Feeding Assessment Scale, Ways of Knowing Inventory, and Maternal Breastfeeding Evaluation Scale that focused on maternal infant feeding preference, learning styles, and maternal breastfeeding satisfaction. In addition, a variety of open-ended questions regarding prenatal breastfeeding beliefs and postpartum realities were used to identify changes that occurred as women negotiated from pregnancy to the early and late postpartum periods. Repeated measures ANOVA indicated significant differences in the silence and subjective dimensions of the Ways of Knowing Inventory indicating that as time passed, women were less

likely to feel as though they had no voice in matters concerning breastfeeding their infants, $F(2, 142) = 3.21$, $p < .05$ and more apt to realize the value of their intuitive powers and believe that the truth could reside from within as opposed to relying on outside authorities, $F(2, 142) = 4.98$, $p < .01$. Critical discourse analysis revealed power struggles between FTMs and hospital personnel whose actions often undermined maternal efforts. Infant responses to feeding method were found to play a pivotal role in breastfeeding outcome suggesting a bilateral decision making process. Mothers also preferred individualized care as opposed to generalized instructions. The adequacy of the current breastfeeding paradigm will be discussed with suggestions on how to restructure current breastfeeding education to be more focused on the unique needs of women and their infants.

Keywords: breastfeeding, first time mother, paradigm, Internet, qualitative, infant agency, mixed methodology, ways of knowing

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> "If a multinational company developed a product that was a nutritionally balanced and delicious food, a wonder drug that both prevented and treated disease, cost almost nothing to produce and could be delivered in quantities controlled by the consumers' needs, the very announcement of their find would send their shares rocketing to the top of the stock market. Women have been producing such a miraculous substance, breastmilk, since the beginning of human existence." (Gabrielle Palmer, 1998)

Chapter 1. Introduction

If you ask anyone to describe the best way to feed an infant, the majority of replies would entail some aspect of breastfeeding suggesting that the Breast is Best mantra constitutes a very robust phenomenon. Even infant formula campaigns mention or state in fine print that the breast is best in their print ads and television commercials. For the past four decades, breastfeeding has been promoted in the United States as the ideal method of infant feeding leading one to ask, if the benefits of breastfeeding for infants, women and the general population are so vast, why are policy makers continuously noting how breastfeeding rates are low and tirelessly working towards increasing current breastfeeding rates? Their answer may lie in the words of first time mothers who have decided to breastfeed. Policy makers have played a dominant role in shaping the current breastfeeding paradigm with their breastfeeding recommendations. What is less known are the voices of women who engage in the act of nursing which can result in an unbalanced view of breastfeeding. As a way to rectify this unbalance, the voices of mothers and their infants need to be taken into account when deciding if the mantra, Breast is Best is an accurate portrayal of the lived experience of breastfeeding. The journey of first time mothers as they navigate from pregnancy to the postpartum period may help reveal aspects of breastfeeding that have been cloaked in silence or regarded as unimportant. Just as the spoken words of policy

makers imbue a view of breastfeeding to the general public, the unspoken words of mothers can hold a similar power.

Current State of Breastfeeding

Breastfeeding is quickly taking on a life of its own that often neglects the voices of women as medical professionals, parenting literature, formula commercials and other forms of media marketed towards pregnant women all stress the fact that the breast is best. Numerous studies continue to find breastfeeding to offer numerous benefits for infants such as increased intelligence and cognitive development, a decreased chance of adult obesity, reduction in acute illnesses including diarrheal diseases (e.g., Crohn's disease, colitis), meningitis, necrotizing enterocolitis otitis media (ear infections), respiratory tract infections, as well as chronic illnesses such as, sudden infant death syndrome (SIDS), childhood obesity, certain types of childhood leukemia and lymphomas, eczema, certain types of heart disease, allergies, and diabetes (Alm, Wennergren, Norvenius, Skjaerven, Lagercrantz, Helweg-Larsen, & Irgens, 2002; Bener, Denic, & Galadari, 2001; Creighton, 2002; Davis, Savitz, & Graubard, 1988; Dewey, Heinig, & Nommsen-Rivers, 1995; Gartner & Black, 1997; Gillman, Rifas-Shiman, Camargo, Berkey, Frazier, Rockett, Field, Colditz, 2001; Lucas & Cole, 1990; Morrow-Tlucak, Haude, & Ernhart, 1988; Newman & Pitman, 2000; Picketing & Morrow, 1993; Saarinen, 1982; Saarinen & Kajosaari, 1995; Sheard, 1988; Wang & Wu, 1996; Wright, Holberg, Martinez, Morgan, & Taussig, 1989). In addition, breastfeeding has been found to offer preventative measures, such as reducing the development of Type 2 diabetes among adolescents in three ethnic groups (Mayer-Davis, Dabelea, Lamichhane, D'Agostino, Jr., Liese, Thomas, McKeown & Hamman, 2008). As we can see, the health benefits of breastfeeding are vast and growing.

With attention to being green, breastfeeding is one of the greenest ways to feed an infant

because the production of hundreds of liters of breast milk from a single woman leaves no carbon footprint (Palmer, 2009). Production, transportation, storage, and dissemination costs are efficiently taken care of by the nursing woman without harm to the environment or creating any waste. Breastfeeding has also been tied to increased feelings of bonding between mother and infant. Maternal and infant skin-to-skin contact has been found to increase oxytocin levels and facilitate the mother's milk ejection reflex, which is conducive to breastfeeding success (Bramson, Lee, Moore, Montgomery, Neish, Bahjri, & Melcher, 2010). This increase in oxytocin while breastfeeding may also play a role in many women associating nursing with love for their infant. Gerhardt's (2004) studies on maternal love and infant brain development found that infants who were lovingly cared for were more likely to experience a burst in neural connections in their prefrontal cortex shaping their social and emotion well-being suggesting social benefits with breastfeeding. In addition, siblings who were breastfed and the mothers who nursed them may share a closer genetic match making organ donations amongst one another more successful due to the maternal cells that were once shared through breastfeeding (Kois, Campbell, Jr., Lorber, & Sweeton, 1984). These findings create a convincing view that breastfeeding is highly beneficial to not only infants but the environment as well.

With such an impressive list of benefits, one may question the objectivity in research on breastfeeding. The adherence to the Breast is Best mindset is evident in the majority of published studies that support the benefits of breastfeeding but this trend may also suggest a bias towards studies that find null results or are unable to find conclusive evidence that breastfeeding in itself is the cause of particular health benefits. Wolf (2007) offers a comprehensive list of studies that found inconclusive results regarding the benefits of breastfeeding citing shoddy methodology, problems with observational studies, the inability to control confounding

variables, and parenting behaviors that resulted in the same benefits of breastfeeding that have nothing to do with actual breast milk (e.g., engaging in a healthier lifestyle, greater parental involvement, etc.). These findings suggest that there are a multitude of factors to consider before determining if the breast is best but this objectivity may be silenced by peer pressure supporting the Breast is Best mentality.

Wolf's critique of published studies also highlights a common problem where findings garnered from scientific studies are held in a higher regard than the subjective knowledge of actual nursing mothers. In many ways, objectivity and generalizability are often the gold standards in research related to breastfeeding, which results in definitions of breastfeeding success based not on the experiences of nursing mothers but the words of breastfeeding experts and researchers. Consequently, women who base their decision to breastfeed on objective and empirical findings that support the Breast is Best mentality, may find themselves in a predicament when their knowledge of the benefits of breastfeeding is not enough to sustain everyday living as a breastfeeding mother. If this is true, the voices of breastfeeding women can help them reclaim their breasts and role in breastfeeding.

With many of these studies published in peer-reviewed nursing journals, the influence of the medical model often depicts breastfeeding in a disembodied fashion. Some may view this silence of women's voices to suggest education offered by outside authorities or experts are the only valid ways to educate mothers on how to breastfeed. A by-product of this linear way of thinking has resulted in a backlash towards mothers who choose formula feeding being accused of being selfish, immoral, and ignorant, among other negative connotations. The lure of scientific research may convince many to value empirical findings over subjective knowledge but there is hope though as more current research on breastfeeding is acknowledging the role of

society in infant feeding trends, suggesting a social constructionist influence on breastfeeding. Mohrbacher and Kendall-Tackett (2010) accurately state that breastfeeding itself has not become more complicated as compared to the past when it was the norm but it has been our views of breastfeeding that have changed. The current manner in which breastfeeding is portrayed to the American public is shaped by government agencies such as the American Academy of Pediatrics (AAP) and the Centers for Disease Control (CDC). These agencies play a pivotal role with their breastfeeding guidelines and health promotion programs such as the Healthy People 2020 campaign.[1] This health initiative aims to educate people on a variety of health objectives for the year 2020 with the inclusion of increasing current breastfeeding rates to meet the guidelines proposed by the AAP. The previous Healthy People 2010 aimed to have 75% of all mothers initiate breastfeeding, 50% to continue breastfeeding to 6 months, and 25% to continue breastfeeding for one year. Based on the findings of the Breastfeeding Report Card for the United States, "The U.S. has now met the Healthy People 2010 national objective for breastfeeding initiation. However, rates of breastfeeding at 6 and 12 months as well as rates of exclusive breastfeeding at 3 and 6 months remain stagnant and low."[2] The CDC understands the impact of these breastfeeding realities and their response were to increase all the breastfeeding objectives previously listed in the Healthy People 2010 initiative in their 2020 initiative. They also included three new objectives in the Healthy People 2020 plan to increase the number of worksite lactation support programs, decrease the percentage of breastfed newborns that receive formula supplementation within the first 2 days of life, and increase the proportion of live births

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[1] Healthy People 2020 breastfeeding objectives http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26

[2] Breastfeeding Report Card - United States 2010 http://www.cdc.gov/breastfeeding/data/reportcard.htm

that occur in facilities that provide recommended care for lactating mothers and their babies. Although the response of the CDC acknowledges factors that reduce breastfeeding rates, they continue to portray breastfeeding in a simplistic fashion that often ignores the complexities inherent in the breast versus formula debate.

What we have seen consistently are policy makers shaping the experiences of breastfeeding with stringent breastfeeding recommendations and research that supports the benefits of breastfeeding. We consider the impact of creating a model of breastfeeding that places expert advice before the voices of individual mothers and question whether this is the reason why women living in the United States have one of the lowest breastfeeding rates when compared to women worldwide. We believe that one way to gather a truer depiction of breastfeeding is to ask women who are at the epicenter of first time motherhood to share their breastfeeding experiences as a way to counteract the reliance on the words of non-mothers who deem themselves as breastfeeding experts. As a way to support this trend and resist the hegemony of policy makers, a combination of quantitative and qualitative methodologies are presented in this work. To encourage a more complete picture of breastfeeding, the responses of mothers will be utilized to expand the definition set by the scientific community, challenge existing notions of the value of women's voices and promote a new method of conceptualizing breastfeeding where women can determine the best way to nourish their infants based on their own needs and circumstances.

'Breast is Best' Meets Real Life

The current state of breastfeeding finds it to be the optimal form of species-specific nutrition for human infants. As studies on breastfeeding are growing exponentially every year, obstacles still face breastfeeding women which suggest that empirical findings may not provide

enough incentive or support for mothers. This line of thinking goes against what policy makers believe when they tout the mantra, Breast is Best. Breastfeeding advocates also buy into this mindset and often portray breastfeeding as an infant's fundamental right and aspects that do not fit into the traditional heteronormative model (e.g., the mother working outside of the home) are frowned upon.

The stronghold of these forces has convinced many women that the breast is indeed best but problems arise when women find breastfeeding to be more difficult than originally imagined leading them to question their own shortcomings rather than examine outside factors such as the overall structure of the breastfeeding paradigm. This mindset gains momentum when policy makers blame women when breastfeeding rates do not match their proposed recommendations as opposed to questioning their own actions that may inhibit women from nursing such as governments who do not reinforce provisions against formula manufacturers for fear of financial retribution, lame duck policies that sound great on paper but are rarely enforced, allowing formula manufacturers to self-regulate their own actions without consequences (Palmer, 2009). As a result, mothers quickly become the scapegoat as neither parties question the possibility that current breastfeeding guidelines set by policy members may be an inaccurate blanket statement or unrealistic based on all the hidden agendas. Scapegoating mothers is not new as the history of formula has shown that mothers have been continually blamed for inadequate preparation of formula leading to high infant mortality when in actuality, it was the formula companies whose unsanitary conditions produced contaminated products that contributed to scores of infants dying from dysentery or staphylococcus aureus (Palmer, 2009). The acceptance of breastfeeding based on the Breast is Best ideology is also believed to promote reliance on outside authorities leading us to question, is there a way for mothers to breastfeed that is based on their own terms that have

nothing to do with AAP recommendations?

In order to find the answer to this question, we examine women's experiences of breastfeeding because through their own words so we can better understand how breastfeeding recommendations dictated by medical authorities affect their breastfeeding experience. If there is no research documenting the experiences of women who are breastfeeding under these guidelines, how are breastfeeding experts who endorse these recommendations able to gauge whether their suggestions are helping or hindering women? So far, the manner in which breastfeeding is currently portrayed to women has not resulted in the desired results for both women and policy makers indicating a need for change.

Purpose and Importance of Study

In examining how women today are being taught how to breastfeed, there are three areas in breastfeeding that may benefit from change. First, the current model of breastfeeding is based on a theoretical approach where traditional ways of learning such as reading about breastfeeding, listening to experts, attending breastfeeding classes are considered sufficient in preparing oneself for a never enacted task. Under this model, many new mothers believe that relying on the expertise of others through the methods listed above is adequate preparation for a successful breastfeeding relationship with their newborns (Johnson, Mulder & Strube, 2007). Based on the medical model and scientific research, this method of learning may offer women a false sense of confidence. Trouble may arise once their babies are born and prior confidence levels drop as a screaming newborn that is hungry and doesn't follow breastfeeding by the book can result in anxiety in new mothers. Change in this area will identify whether theoretical breastfeeding is an adequate model of teaching women how to breastfeed. Being able to distinguish between theory and practice may result in more effective interventions that include both prenatal and postpartum

breastfeeding support. To change the primary focus of breastfeeding education from a purely theoretical perspective to one that incorporates both theory and practice may lower the instances of formula supplementation during the early postpartum period.

Second, it seems that current research on breastfeeding has focused primarily on the physical health benefits for infants and mothers. The growing scientific literature has been successfully convincing medical professionals and lay people on the benefits of breastfeeding as evidenced by breastfeeding initiation rates during the early postpartum period but sustaining breastfeeding beyond this period can be more challenging. According to the AAP and numerous health organizations, the breast is best for all babies but we are soon finding that it may only be best for certain mothers under particular circumstances. The generalization underlying the mantra, Breast is Best often fails to take into account individualized circumstances that may result in a poor match with the lifestyle needed to breastfeed for an extended period of time. For example, lower income mothers may be less likely to have the privacy or time to express breast milk throughout their workday, which is imperative to sustaining the supply and demand cycle of milk production (Ma, 2008). Some mothers may also weigh the consequences of spending additional time at work to express milk with leaving the workplace on time to be with their formula fed baby. These are real dilemmas mothers face when deciding how best to feed their infants that move beyond simple health benefits. Therefore, policy makers such as the AAP and CDC may not be cognizant of these issues that are very real to mothers who are entrenched in the day-to-day decisions of whether to breast- or formula feed when they design breastfeeding guidelines. It is a possibility that structural ignorance of these issues may be one of the reasons why the AAP views current breastfeeding rates as “stagnant and low” with little attempt to change the breastfeeding paradigm other than state that, “mothers continue to face multiple

barriers to breastfeeding."[3] Such statements still point the finger to mothers as opposed to a system that fails women. Change will reflect an expansion of physical benefits to include psychological and emotional benefits. By expanding the list of physical benefits, mothers may be better equipped to buffer against the stress of breastfeeding and researchers may be able to offer more effective ways to support women that are woman-centered.

Last, there seems to be a bias in how breastfeeding information is presented even though breastfeeding is clearly an activity where the majority of those interested in learning are women. This bias is believed to stem from a style of learning that uses a top-down model where those in power or experts, dictate how long women should breastfeed, how often newborns need to be nursed, and offer generalized instructions on how to breastfeed that do not take into account individual differences or context. With the majority of women giving birth in a hospital setting, the structure of the maternity ward is similar to the descriptions Foucault (1977) offers in his depiction of elementary schools where there are clear roles between teachers and pupils. Applying Foucault's top-down model we see a hierarchy of power with medical professionals as teachers and patients as students. Power struggles can be seen in how maternity nurses teach women how to breastfeed with women attempting to acquire breastfeeding knowledge while practicing their techniques under the surveillance of the medical professional (e.g., maternity nurse, pediatrician). With power emanating from the medical professional in a top-down fashion, there is little a woman can do who is unable to learn in this manner. This hierarchy of power tends to disempower the nursing mother while normalizing a method of breastfeeding that is not based on the subjective notions of the individual woman but the objective measures of those in power. Foucault (1977) states that the power of the Norm establishes a principle of

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[3] Breastfeeding Report Card – United States 2010
http://www.cdc.gov/breastfeeding/data/reportcard.htm

coercion in teaching based on a model of standardized education. As a result, the model of breastfeeding normalized by medical professionals is one that encompasses a generalized one that is believed to apply to all nursing women. Marginalization may ensue where women who find that their experiences fall outside of this standardized model may be viewed upon as anomalies as opposed to critiquing a faulty model. The processes of standardizing breastfeeding also contributes to an objectification of those who are subjected, which fosters a view of breastfeeding as a disembodied performance that can be taught in a vacuum by individuals who have no emotional ties to the learner (e.g., mother) or the recipient (e.g., infant). This may explain why the majority of breastfeeding classes are taught without the presence of its second most important participant, namely the infant.

In light of the current manner of how breastfeeding is taught, mothers may experience an increased sense of self-blame when the occurrence of breastfeeding difficulties is interpreted as an inability to breastfeed. For many people being able to repeat what they have learned is considered knowledge and in this case, being able to repeat the Breast is Best mantra is regarded as being knowledgeable about breastfeeding. Messages from physicians, policy makers and breastfeeding organizations such as the La Leche League, have convinced many that the breast is best but repeating that statement does little to help a new mother breastfeed her baby. Suggestions on changing the current paradigm will include acknowledging the differences in learning patterns among women that contest the assumption that all women learn in the same manner and at the same starting point. There may be differences in how women learn that are not suited to the current breastfeeding paradigm and to identify these differences may be the first step towards building a new paradigm that better serves women.

Conceptual Hypotheses and Summary

Current methods of teaching women how to breastfeed seem insufficient in helping them achieve the full spectrum of benefits in breastfeeding and suggest that this manner of teaching is not fulfilling the needs of most breastfeeding women. It is proposed that three avenues of interest have been neglected in how women are taught to breastfeed. With the majority of breastfeeding education based on classes taken during the prenatal period, women are at a disadvantage as their infants are not available to help them learn the practical side of breastfeeding. To learn about breastfeeding by listening to a medical professional in a classroom setting offers only a theoretical side of breastfeeding that may be incomplete in its teaching format. This research aims to provide evidence that such an approach is inadequate.

In addition, the current emphasis on the physical benefits of breastfeeding needs to be widened to include psychological and emotional benefits which may provide a better understanding of the guilt, anxiety, feelings of failure or perseverance many women experience when they encounter breastfeeding related problems. These findings can help generate theories that will help buffer the emotional costs of breastfeeding that remain hidden from mothers and form the foundation for a greater appreciation of their own bodies as a woman and mother.

As alternative models of learning based on the work of Belenky, Clinchy, Goldberger, and Tarule (1997) are examined, the findings of this research attempt to break the cookie cutter model stemming from a traditional pedagogic model where learners are assumed to be at the same point in learning and learn at the same rate. We examine whether it may be more effective for women to learn how to breastfeed that is based on their own style of learning where women who are passive may learn in ways that include more direct instruction while women who are proactive may want information that covers the pros and cons of each method so they can decide

which method works best for themselves. To teach a woman how to breastfeed according to their own learning style puts her in the driver's seat and encourages her to make the best decisions for herself and her infant. This alone can result in a more positive breastfeeding experience.

The goals of this study are to provide evidence that knowing that the breast is best is not enough to breastfeed, expand the knowledge of breastfeeding, identify learning styles that are unique to women, and contribute to building an alternative model of breastfeeding that will be sensitive to the needs of women.

Chapter 2. Review of Relevant Literature

When a woman is pregnant, one of the most important decisions she makes is how to feed her infant. Although this decision is impacted by numerous outside forces, the decision to breastfeed is often portrayed as an individualized decision (Ma, 2008). As the CDC considers 3 out of 4 women initiating breastfeeding to be a success in meeting their Healthy 2010 objective, the lack of practical breastfeeding information may contribute to problems in reaching the recommended long-term breastfeeding goals of breastfeeding to 12 months. When women "fail" to meet the breastfeeding goals set by the AAP, WHO and the Healthy People 2020, there is little criticism of the actual guidelines as being problematic or unrealistic. Some may suggest that the AAP has monopolized the definition of breastfeeding whereby their recommendations and declarations of high or low breastfeeding rates are out of touch with the reality nursing mothers face. In this manner, knowledge of breastfeeding moves forward in a linear fashion as objective research builds upon the previous findings supporting the benefits of breastfeeding. As a result of this scientific model, there is a continual drive forward and medical professionals believe that any new findings on the benefits of breastfeeding are enough to convince women to breastfeed their infants. Wolf (2007) points to an irony related to this objective pursuit of information where experts on breastfeeding tend to suffer from "expert paradox" and become unable to review research in an objective manner due to their very own expertise on the subject matter. As a result, these experts may become blinded by their expertise and the knowledge of their field can be greatly compromised.

Theoretical Versus Practical Breastfeeding

The potential problems of relying primarily on objective science can also trickle down to how individual mothers learn how to breastfeed. Manstead, Proffitt, and Smart (1983) stated that

for primiparous mothers, choosing and using a method of feeding their infants is unusual in the context of adult social behaviors in that their decision has never been previously enacted. This suggests that many first time mothers decide how to best feed their infants in a blind sense. This brings us to the differences between theoretical breastfeeding where first time mothers learn about breastfeeding through a variety of means (e.g., published literature, friends/family, medical professionals, the Internet, etc.) and practical breastfeeding where women learn about breastfeeding along with their newborns, combined with their unique physiological and psychological makeup regarding lactation.

In Personal Knowledge, Polanyi (1958) articulates a case for the epistemological relevance of both theoretical and practical forms of knowledge where it is important to understand how both forms are established and grounded. According to Polyani (1966), human knowledge consists of knowing more than we can tell suggesting that the feminine body can be a haven for embodied knowledge (p. 4). He further defines embodied knowledge as embracing both intellectual and practical knowledge as "our body is the ultimate instrument of all our external knowledge, whether intellectual or practical" (Polyani, 1966, p. 15). As we apply his theories of tacit knowledge to breastfeeding, we find that his focus on embodiment emphasizes the importance of application in the formation of theory and knowledge. Therefore, in order for learning to be effective, the uniqueness of life experiences and self-concept must be taken into account. Brillinger (1990) supports the notion that effectual breastfeeding education should take into account each mother's uniqueness and be open to the myriad of learning styles as a way to incorporate new behaviors into lasting behaviors. It seems as though the majority of breastfeeding education has not supported the different learning styles of women nor valued their own experiences. Similar to Foucault's views on the preference of objective knowledge over

subjectivity, Polanyi also believed that the aim of modern science was to establish a strictly detached, objective knowledge (1966, p. 20). This detached and objective knowledge is the epitome of the structure of breastfeeding knowledge as currently taught to women. Teaching women how to breastfeed in this manner tends to devalue and ignore the role of tacit knowledge by destroying all forms of knowledge because the pursuit of objectivity silences the mother by eliminating all personal and embodied elements of knowledge. This attempt to eliminate the personal elements of breastfeeding may be one of the reasons why it has been difficult for women to breastfeed according to the recommendations set by the AAP and why current notions of breastfeeding to incorporate a more individualized approach have been resistant to change. Unfortunately, the emphasis on the objective quality of knowledge narrowly defines what is known to be true and has the potential to create misleading information that can destroy all knowledge (Polyani, 1966, p. 20).

Pregnant women who believe that learning about breastfeeding from reading relevant literature is adequate preparation may not realize that theoretical knowledge cannot substitute or is a poor substitute for the practical aspects of how to actually breastfeed. Based on the structuralist view of knowledge, meaning and understanding lies in scientific theory, clinical trials and objectivity as opposed to the experiences of the individual (Pinar & Reynolds, 1992). Based on this linear way of thinking, it seems reasonable to question why so few women are breastfeeding according to the recommendations set by the AAP because the research clearly shows that the breast is best but this method of thinking leaves out many aspects of tacit knowledge that may prove influential in how women learn. One vital aspect of the practical aspects of breastfeeding is the role of infant.

Role of the infant. Few individuals point to the fact that it may be difficult to learn how

to breastfeed when the second most important participant (e.g., the newborn) has yet to be born with little said regarding the agency of the infant who is an active participant in the breastfeeding relationship. An examination of published breastfeeding literature portrays the infant as a passive source of suckling action that has little input in breastfeeding. In actuality, the infant is quite an active participant as she has to work for her breast milk by exhibiting signs of hunger or needing comfort and then suckling effectively to milk her mother's breast (Palmer, 2009). Through the infant's suckling action, she is able to regulate her mother's production by establishing the milk supply during the early postpartum period or stimulating the areola to send chemical signs to her mother's brain to increase the amount of milk to be made. In this sense, both infants and mothers play critical roles in fostering and establishing successful breastfeeding. Rarely is the role of the infant mentioned except to denote how their tongues need to be positioned in order to get a good enough latch but that role is passive and disembodied.

Wayland (2004) found that successful breastfeeding in Brazil was the result of a bilateral decision making process where both mothers and infants must decide to breastfeed. This article was the first to address an infant's agency in the breastfeeding relationship supporting the argument that only after the birth of her baby, can practical knowledge of breastfeeding be derived and put into action by both mother and infant. Palmer (2009) noted that medical and cultural influences have negatively affected the natural progression of breastfeeding shortly after birth with routine procedures that often separate mothers and newborns. In Keller's (2003) concept of (quasi) equal communication, Western middle-class mothers interpreted their infant's use of eye contact as their first means of communication. The ability of infants to gaze lovingly into their mother's eyes or to look away from their mother is an important sign of the early interactive capabilities of infants and provide evidence that early separations may negatively

affect their ability to communicate as there is no receiving end to their eye contact. As routine procedures often whisk newborns away to be cleaned, measured and weighed, few mothers are allowed to participate in this method of early communication, let alone nurse them.

Only with the arrival of her newborn can a mother and infant make a bilateral decision to nurse. Some infants may stare loving into their mother's eyes as they nurse while others may scream and refuse to latch. According to this line of thinking, it seems reasonable to assume that how an infant reacts to nursing can subsequently affect their mother's decision to nurse. Yet, educators in breastfeeding continue to teach general guidelines that are based on a unilateral decision-making process where educating the mother is considered adequate preparation for successful breastfeeding. In these cases, nursing mothers may find themselves in for a rude awakening and unprepared in dealing with an uncooperative, screaming infant.

Interestingly, the disregard of the infant as an active participant in the breastfeeding relationship later turns into an intense scrutiny once the infant becomes the recipient of breast milk. Here we see how the role of the infant is based on tangible aspects that include how long they are put to the breast, how often they should be nursed, how many diapers have they wet, and the consistency of stools in a variety of colors. As a result, a desire for controllable aspects, such as feeding an infant every four hours may become more valued than nursing on demand where the infant's behaviors dictate when and how much they wish to nurse creating a synchrony between maternal and infant bodies. This relates back to the agency of the infant where those who nurse on demand result in the mother's milk supply becoming more attuned to the amount of milk needed resulting in less engorgement and leaking. The unilateral view where the mother is the only one who decides whether or not to breastfeed, coupled with the scientific and technocratic view of motherhood that encourages strict feeding schedules can translate into

anxiety for many mothers. If a new mother views herself as the sole person in her decision to breastfeed, any difficulties experienced will be blamed on her own shortcomings. In a similar vein, if she nurses her infant based on a strict feeding schedule, there is a greater likelihood that she will not be able to produce enough milk due to a lack of stimulation to her breasts. This line of thinking optimizes maternal guilt while disregarding the agency and psychological aspects of the infant, such as whether the infant is happy and thriving. As a result, any deviation from the pediatrician's standardized growth chart becomes cause for alarm with the first accusation pointing to the mother's milk.

Only recently have growth rates between formula-fed and breastfed infants come under scrutiny. Grummer-Strawn, Reinhold and Krebs (2010) noted differences in the growth patterns of exclusively breastfed infants as compared to infants who were formula-fed. Additional differences were found between growth charts created by the World Health Organization (WHO) and the CDC. The growth charts by the WHO were based on the premise that "the healthy breastfed infant is the standard of which all other infants should be compared" with all of their infants having been breastfed for 12 months whereas the charts created by the CDC consisted of approximately 50% of infants who ranged widely in the degree of breastfeeding (Grummer-Strawn, Reinhold and Krebs, 2010). According to the CDC, exclusively breast-fed infants experience a rapid weight gain in the first few months of life but tend to weigh less than formula-fed infants in the subsequent 6 to 12 months. [4] Most of the growth charts currently in use are those created by the CDC, who strongly advise women to breastfeed through their infant's first year of life. The confusion stemming from the samples of infants of whom these growth charts have been based on has the potential to raise alarm when breastfed infants are measured against

[4] Frequently Asked Questions About the 2000 CDC Growth Charts
http://www.cdc.gov/growthcharts/growthchart_faq.htm

the growing patterns of primarily formula fed infants and vice versa. The CDC does attempt to rectify their growth chart confusion by stating on their website that mode of infant feeding can affect growth patterns and that growth chart interpretations need to account for these differences yet they make no reference to the conflict suggested by their recommendations and the sample of infants used to create their own growth charts.

The Psychology of Breastfeeding

With much of the emphasis on breastfeeding concentrating on the physical aspects and health benefits, the psychological and emotional ties inherent in breastfeeding are often ignored when women are taught how to breastfeed. The impact of the psychology of breastfeeding can best be expressed in the diagnosis of insufficient milk syndrome. It is known that decreased amounts of physical stimulation to the breast can result in this diagnosis, which coincidentally arose when medical professionals began to supervise breastfeeding and recommend strict feeding schedules that limited the infant's time at the breast (Palmer, 2009). The suckling action of the infant is especially crucial during the first few days after birth because this is the time when stimulation to the mother's breast is needed to establish the mother's milk supply. Gussler and Briesemeister (1980) believed that insufficient milk syndrome was a rationalization women used when stress from breastfeeding overwhelmed them and the diagnosis of insufficient milk offered them a socially sanctioned reason to discontinue breastfeeding. In response to these claims, Greiner, Van Esterik, and Latham (1981) offered an alternative explanation for insufficient milk syndrome noting that there are situations where the diagnosis is accurate but detecting the cause or causes of this syndrome is less clear. This situation also raises the question of the role of "experts" who may unknowingly create an atmosphere where mothers feel the need to rationalize their decisions to breastfeed or formula feed in a socially acceptable manner as opposed to their

own decision making process.

Regardless of origination, a woman's perception of her milk supply can cause insufficient milk syndrome. Newton (1958) was among the first breastfeeding researchers to link a woman's psychological state with lactation failure and found a positive correlation between maternal determination and milk supply. This relationship between breastfeeding and emotion is not new as other researchers have noted emotional factors that can affect a woman's let down or milk ejection reflex (Jelliffe & Jelliffe, 1978; Call, 1959; Bacon & Wylie, 1976). These findings make sense because breastfeeding can be viewed as an intimate relationship that is intricately tied to a mother's perceptions and psychological state but there is little research examining this link. The disregard for this link may be connected to the fact that medical professionals wish to legitimize their role in breastfeeding by portraying it as a science that should be viewed through empirical and objective eyes within the medical model.

The emotional factors in motherhood and mothering can become highly charged experiences for first time mothers living in a neoliberalist society. Since motherhood is often a privatized experience, new mothers who find themselves experiencing difficulties tend to internalize aspects of motherhood that threaten their image of a "good" mother with failing to breastfeed often translating into failure as a mother. This cognition may set the stage for lower mastery expectations (e.g., less likely to persevere when difficulties arise) and detrimental behaviors (e.g., limiting the infant's time at the breast, timed nursing sessions, etc.) that can exacerbate insufficient milk syndrome. On the other hand, women who discovered that their bodies could produce milk, infants preferred breastfeeding to formula and were healthier, felt more efficacious and satisfied with their breastfeeding experience (Locklin, 1995). Once mothers made the connection that her breastfed infant was healthier than infants who were

formula fed, this link further motivated women to work through any sustained difficulties and surpass their current breastfeeding duration goals (Locklin, 1995). As these women became more successful at breastfeeding and were better able to gauge these successes, either through a heightened appreciation of their own embodied knowledge or through the health of their infants, their confidence levels rose which highlights a change in what they know to be true. This connection suggests that helping women succeed at breastfeeding has the potential to foster a more positive self-image as well as increasing the health of their infants. If this is true, breastfeeding may become less of a marker for good mothering and offer women a way to reclaim breastfeeding that does not involve outside authorities and experts. The link between a mother's psychological state and insufficient milk syndrome can offer researchers a new avenue to explore. Statistics show that insufficient milk syndrome occurs in about 5% of women who suffer from insufficient mammary glandular tissue. If the remaining 95% of insufficient milk cases are not physical and have a psychological basis, breastfeeding researchers who try to better understand the psychological aspects of breastfeeding can move toward eliminating the number one cause of weaning. This could entail a drastic change to the current breastfeeding paradigm and spark a movement to acknowledge the psychological factors inherent in breastfeeding that could possibly combat some of the stressors of living in a neoliberalist society.

How women are taught to breastfeed. Our current knowledge of breastfeeding finds that breast milk offers the most health benefits than any other form of infant feeding and this fact is agreed upon by both policy makers and individual mothers. Unfortunately, the primary focus on the tangible aspects and health benefits of breastfeeding for the infant may leave gaps in breastfeeding education that are key to sustaining a long-term breastfeeding relationship. Based on the scientific model, it makes sense to focus on the immediate and short term benefits which

focus predominantly on the infant. The increase in breastfeeding initiation rates supports this linear way of thinking but this outcome brings up the question of whether it is possible to conceptualize breastfeeding in a way that moves beyond health benefits. Eidelman (2006) found the manner breastfeeding was upheld in the religious legal code of the Talmud increased the frequency and duration of breastfeeding in Orthodox Jewish women. Interestingly, the Talmud makes no reference to the medical benefits in breastfeeding but focused on the superiority of breast milk, extended breastfeeding between mother and child, and the social and economic rights of the nursing mother (Eidelman, 2006). These findings lend credence to the fact that there are alternative ways to promote breastfeeding that move beyond health benefits and that social and economic forces can influence breastfeeding outcome.

Another gap in education stems from the changes in lifestyle that are needed to sustain a breastfeeding relationship. Mothers may understand how breastfeeding benefits their infant but is that knowledge enough to sustain her commitment to breastfeed? With breast milk more easily digestible than infant formula, newborns need to be fed approximately every two hours around the clock. During the early postpartum period when mothers and their infants are still mastering the basic mechanics of breastfeeding, the time needed to get an infant latched on may take over an hour, which leaves little time for rest and recovery from childbirth. The lack of sleep and anxiety resulting from first time motherhood can also gravely impact the mother's milk supply resulting in a higher likelihood of insufficient milk syndrome and weaning. As of today, the typical new mother who has had a vaginal birth is discharged from the hospital after 48 hours and a mother who gives birth through cesarean section is released 72 to 96 hours after birth.[5] Such short hospital stays as compared to those four decades ago, may negatively affect how

[5] http://www.marchofdimes.com/pnhec/240_1031.asp

postpartum women learn to breastfeed.

Stages of Learning

Additional aspects of breastfeeding education that may hamper women include generalized instructions that assume all women learn in the same manner and begin at the same starting point. Buczynski (1993) notes the detriment in subscribing to this pattern of learning where deviation from a woman's natural way of learning has the potential to foster feelings of inferiority. A generalized, one-size-fits-all model of breastfeeding may result in mothers feeling isolated and discouraged when their unique breastfeeding experience differs from the definitions set as the standard by breastfeeding "experts." Subscribing to this ideology may disempower women because they soon learn that their bodies are unable to breastfeed and must be taught by outside experts.

This pattern is most evident when dealing with a common problem breastfeeding mothers often face, that of conflicting information. Although many individuals agree that breast is best, medical professionals still dispense inaccurate breastfeeding advice such as limiting the time the newborn suckles at the breast to prevent soreness or to supplement with formula. The practice of time restrictions can be traced back to "An essay upon nursing and the management of children from their birth to three years of age" written by William Cadogan (1748) who was an influential 18th century doctor that advocated 4-hour feedings and no night feedings. It seems amazing that Cadogan's advice has lasted for so many centuries when we know that his advice leads to less stimulation of the breast, which decreases a mother's milk supply. Inadvertently, when a woman finds herself at the receiving end of conflicting advice she may second guess herself and lose confidence in her decision to breastfeed as well as her mothering abilities. It is important to examine how women deal with conflicting advice and/or misinformation because their responses

to these scenarios may impact their future self-views where faith in their own bodies can result in empowerment or reliance on outside authorities can lead to a continual domination by powerful others. Reliance on experts may be more pronounced in first time mothers who are more likely to feel isolated by their naiveté and question themselves more than a mother who has raised multiple children. When faced with conflicting advice, women felt that everyone was an expert except herself, which made her feel pressure to breastfeed (Hoddinott and Pill, 2000). When women breastfeed based on obligation as opposed to self-direction, there may be less incentive to persevere when difficulties arise. At this point, many new mothers have succumbed to the effects of a dominant breastfeeding ideology where dichotomy dictates a right and wrong way to breastfeed with their particular experiences falling into the "wrong" category. As of today, no one has questioned the relationship between the current structure of breastfeeding education and breastfeeding outcome.

Traditional pedagogic standards with its focus on rationality and objectivity have colored the way breastfeeding is currently taught to women. According to these standards, unless there is an objective measure of the propositions under investigation, no information can be considered factual. In a similar vein, self-extrication is a major component of objectivity where feelings and personal beliefs are excluded so that a pragmatic and strategic point of view may surface (Belenky, Clinchy, Goldberger & Tarule, 1997). In this vein, the truth is pure and uncontaminated by emotional reasoning but such rules contradict the intuitive nature of mothers who breastfeed on demand.

Belenky, Clinchy, Goldberger and Tarule (1997) were the first researchers to examine the ties between women's self-concepts and their ways of knowing as they learned in academic settings that stressed a traditional, authoritarian pedagogy. Based on the works of Carol

Gilligan's morality of care and William Perry's mapping of epistemological developments in students, Belenky et al (1997) challenged the masculine bias in the manner female students were taught. As noted earlier, the scientific model fits well with the current structure of breastfeeding because research on the physical benefits of breastfeeding have been based on gathering observable, empirical, measurable evidence that can be replicated and generalizable to the entire population. This manner puts little, if any emphasis on one's personal experience. Despite the role empirical evidence has in convincing people about the benefits of breastfeeding, objectivity may not portray breastfeeding in a complete and accurate manner. Breasts and breast milk production are part of a process that is not only tied physiologically to the mother but many aspects of breastfeeding entail psychological ties between mother and infant. The intimate nature between a mother breastfeeding her child may make it difficult to view breastfeed in an entirely objective manner which may have been the root of the methodological problems expressed earlier by Wolf.

Although there is a place for scientific research in measuring the physical benefits and tangible aspects of breastfeeding, the picture is not complete without context. Belenky, et al (1997) hoped to shed light on the different stages of learning that were unique to women and sought to cultivate ways women could hear their inner voice that was believed to foster an appreciation of the uniqueness of how she learned what would be her truth. When mothers are given the space to hear the subtle cues generated by their infants that are not muddled by conflicting and generalized advice by outsiders or experts, they become more adept at doing what is best for both parties involved that has little to do with unyielding recommendations to breastfeed created by policy makers. Marguerite Duras (1973) puts it best in describing the struggles in learning women face that are taken for granted by men.

> "Women have been in darkness for centuries. They don't know themselves. Or only poorly. And when women write, they translate this darkness… Men don't translate. They begin from a theoretical platform that is already in place, already elaborated. The writing of women is really translated from the unknown, like a new way of communicating rather than an already formed language."

Duras' statement is quite accurate in describing the current state of breastfeeding where women do not have a say in how they will nurse their newborn. They are following the instructions of policy makers who have shaped the way breastfeeding is to be experienced. In order to change the foundation of the current breastfeeding paradigm to offer a more complete depiction of breastfeeding, there needs to be a balance between the scientific aspects of breastfeeding and the intuitive nature of breastfeeding mothers.

The current manner women are taught how to breastfeed is similar to Freire's (1993) concept of "banking." The banking concept of education occurs when educators fill their students with their own narration that tends to be detached from reality and disconnected from the totality that could give them significance (Freire, 1993). This manner is similar to the emphasis on objective and scientific knowledge in what is considered to be the truth while devaluing the personal elements of tacit knowledge. Students are then encouraged to receive, file and store these "deposits" from their teachers. In many ways, current breastfeeding education follows this concept of banking as the government and policy makers deposit health related benefits of breastfeeding into women, encouraging a passive form of learning that results in a blind acceptance of a single way of breastfeeding that may not be a good match to their circumstances. Proponents of this educational framework gauge success from students being able to memorize and repeat phrases such as Breast is Best but the repeating of these words may only indicate a superficial understanding of breastfeeding. As many women are able to recite the benefits of breastfeeding, they unknowingly take on an oppressed state where they look to

outside authorities to dictate how to breastfeed their own infants. This banking concept of education reinforces a linear way of thinking where teachers teach and students are taught. As of today, women have no other option than to learn in this manner. They begin to accept their own passivity and thus, become less able to question how the current manner they are taught to breastfeed is not meeting their needs but rather attributing their own failure as personal deficiencies. If current breastfeeding education is based on this hegemonic mode of thinking, there is little incentive toward changing this model of learning, which may be why few educators question or challenge the current teaching of breastfeeding techniques.

Women's Ways of Knowing. As we critique the way women are taught how to breastfeed, we must also consider the manner in how women learn. Stemming from their belief that women learned differently from men, Belenky et al. (1986) described five epistemological categories in how women attain knowledge. These five categories consist of (1) silence, a position where women describe themselves as mindless, voiceless, and subject to the whims of authority figures who are believed to control all information; (2) received knowledge, where women conceive of themselves as capable of receiving and reproducing knowledge from authority figures but are unable to create knowledge of their own; (3) subjective knowledge, where truth and knowledge are considered subjectively known or based on intuition; (4) procedural knowledge, where women begin to understand the importance of integrating their own intuition with objective procedures for obtaining and communicating knowledge; and (5) constructed knowledge, where women view all knowledge as contextual, see themselves as creators of knowledge, and value both subjective and objective ways of knowing (see Appendix A for more detailed descriptions). Each of these categories, as seen through a breastfeeding lens, offers a distinct look into how women learn to breastfeed.

Buczynski (1993) states that many female college students have been forced into a pattern of intellectual development that may deviate from their own unique patterns of intellectual growth and development. Such deviations have often resulted in female college students scoring lower than their male counterparts fostering misperceptions and categorizations of inferiority. If this pattern of learning extends outside of the classroom, many first time mothers may believe that they are intellectually inferior or unable to learn how to breastfeed after taking all the child preparation classes and reading up on all the literature on breastfeeding. This perception may result in new mothers behaving in ways that are self-damaging (enduring a bad latch that results in nipple trauma) as opposed to seeking help. As mentioned earlier, if the decision to breastfeed is viewed as a sole decision made by the mother, then any problems she encounters leaves only herself to point the finger of blame. As a result, new mothers can lose their confidence and continue to allow powerful others to dictate how they mother and breastfeed their children. Consequently, new mothers may believe they are failing at motherhood or inferior in their mothering abilities. This mindset may stem from current breastfeeding programs being based on a male-dominated theory of learning. When new mothers are unable to breastfeed using a linear approach, they may lose confidence in their own abilities and give up soon after. This is an important issue to explore in developing a better understanding of the dynamics of breastfeeding because the answer may explain why there is a high degree of breastfeeding initiation coupled with a high degree of weaning.

One way to optimize the experience of breastfeeding for women that compliments their stage of knowing is to focus on the inner growth of women as opposed to increasing the rates of breastfeeding that satisfy goals from outside perpetrators. This offers hope as women learn to critique the current breastfeeding ideology and understand that the breast may not be best based

on their unique circumstances or that there are ways to nurse that center on their individual needs. If this proposed change can occur, breastfeeding experiences that are less than ideal do not have to signify breastfeeding failure for women because every experience will have the potential to move women toward more complex ways of knowing. Women will also be able to set their own breastfeeding goals that better match their specific needs as opposed to reaching arbitrary goals set by the AAP that may set women up for failure. Using women's ways of knowing as a framework can map the transformation toward a more critical way of thinking where the truth of breastfeeding which once was considered to lie outside of a woman, can be found within her very own body leading to an embodied connection between mind, body, and spirit. Based on the use of longitudinal methods in this study, how women define the truth can be a critical factor in furthering the current understanding of breastfeeding. With such great potential for change, it is interesting to find little critique of how breastfeeding is taught to women.

The reason behind this may stem from the current breastfeeding paradigm falling under the same spell as Wolf's expert paradox where current methods of teaching about breastfeeding have been universally accepted as the only and correct way for women to learn about breastfeeding. After decades of this model, women have accepted that the breast is best but their actions have not matched their belief systems accordingly. It may be that the multiple decades of pointing the finger at individual mothers is about to end as we acknowledge practical aspects of breastfeeding that include the infant as an active participant, the psychology of breastfeeding where a woman's mindset can affect her breastfeeding outcome, an expansion of breastfeeding that moves beyond its physical benefits while incorporating lifestyle changes, and the uniqueness of how women learn that moves away from this generalized approach.

Research Questions

In order to explore the aforementioned areas that may benefit from change, the experiences of first time mothers who wish to breastfeed were examined using three lenses. The first lens focused on the adequacy of the theoretical model that is currently used to teach women how to breastfeed. Here we examine how prenatal expectations of breastfeeding expressed during pregnancy compare to their experiences after they become mothers and engage in breastfeeding. Current breastfeeding models focus on the theoretical application of breastfeeding, which we believe to be inadequate as they rely on a general model of breastfeeding and lack the input of the newborn infant. If theoretical breastfeeding is an effective way to teach women how to breastfeed, there should be no differences between prenatal and postpartum breastfeeding attitudes because new mothers would feel completely prepared to nurse their newborns. On the other hand, if women are lacking in their knowledge of breastfeeding, there may be differences between breastfeeding attitudes taken while the woman is pregnant as compared to after she gives birth and finds difficulty with breastfeeding. The role of the infant was examined to assess their degree of participation in the breastfeeding relationship. Evidence to support that infants play an active role in breastfeeding may lead to an expansion of the decision to breastfeed to that of a bilateral decision making process and a reconceptualization of the importance of practical application to include the infant. The differences between theoretical and practical knowledge in how women learn to breastfeed can provide strong evidence to support changing the current breastfeeding paradigm. If practical knowledge of breastfeeding is acknowledged as a viable or more effective way to learn how to breastfeed, women may be moving one step closer in corporeal empowerment where the key to successful breastfeeding lies within a woman's body and not in someone else's written words.

The second lens expands the current list of infant health benefits to include maternal, psychological, and emotional benefits as they may provide a comprehensive roadmap of how women negotiate the multitude of feelings when problems in breastfeeding occur which could help develop solutions to buffer negative self thought. This result alone may significantly reduce the instances of insufficient milk syndrome as previous literature has evidence to support a relationship between the mother's mental state and milk production. We specifically examined whether there were additional benefits to breastfeeding that lay outside of the physical benefits for infants? It is believed that current breastfeeding education tends to focus primarily on the physical health-related benefits for infants and ignore the psychological and emotional benefits for mothers. The experiences of this sample of new mothers can expand the range of benefits for mothers who have chosen to breastfeed. Such benefits are believed to include feelings of empowerment, positive maternal and self-images. If the benefits of breastfeeding surpass physical health, this information can be used to better understand and buffer the negativity (e.g., guilt, sense of failure) in mothers who experience difficulty breastfeeding and pinpoint issues that need to be addressed (e.g., breastfeeding lifestyle, maternal body image, etc.).

The last lens investigates whether alternative models of learning (e.g., Belenky et al, 1986) apply to breastfeeding and if so, these alternative models will be used to suggest changes for a new model of breastfeeding education. We question whether women exhibit different ways of knowing and can breastfeeding affect how women seek the truth. Current breastfeeding campaigns tend to focus on a 'one-size fits all' model that assumes an understanding of the benefits of breastfeeding is enough to convince women to breastfeed their babies. Information deposited into women in this fashion is similar to the silence and received ways of knowing proposed by Belenky et al. (1986) that concentrate on being subjected to the whims of those in

authority and unable to create knowledge on their own. It is hypothesized that women will exhibit different learning patterns that move beyond the silence and received ways of knowing where they are active participants in co-creating knowledge and what they know to be true. If women show trends of learning that follow the ways of knowing categories proposed by Belenky et al. (1986), these findings will support the need to teach breastfeeding in a way that utilizes an approach that does not silence women but empowers them.

Chapter 3. Methodology and Procedures

Research Approach

This project utilized the Internet in recruiting women as a way to better accommodate the specific time constraints of new mothers by allowing them the flexibility of completing the questionnaires based on their own timeframes. Online participants were solicited from informative and free pregnancy websites such as www.babycenter.com, www.pregnancy.com, www.cafemom.com, http://parenting.ivillage.com/messageboards, and http://forums.about.com (please refer to Appendix J for online solicitation script). These websites were chosen because they were the most popular when the term, "pregnancy message board" was typed in the two most commonly used Internet search engines, Yahoo and Google. Criteria for chosen websites were they had to be free to the public, offer information ranging from preconception, pregnancy, childbirth, parenting, have "birth clubs" where pregnant women could post concerns, connect with other women in similar stages of pregnancy, and respond to postings from other pregnant women who were also due the same month. These birth clubs were used to solicit women during their last trimester of pregnancy. The timeframe for all three data collection waves from start to finish was approximately 18 months because we needed to recruit from all 12 birth clubs and across all three data waves (e.g., three months during the third trimester of pregnancy, 12 months of women giving birth and 3 months of follow-up during the late postpartum period).

Formal permission was obtained from the moderators of each birth club and only the birth clubs that granted permission to solicit volunteers were used in this study. A short description of the study, degree of participant involvement, and an email address to gather more information was posted to each of these message boards. Detailed information regarding this project, including Institutional Review Board approval, consent forms, and principal investigator

contact information were also posted in each of the birth clubs in the profile section. Within each of these birth clubs, members have the option of providing personal information in the profiles section of the website. I included my own contact information as well as personal information such as the number of children I had, what I did for a living, marital status, for other mothers or mothers-to-be to view. About each month, an online solicitation concerning the study and contact information was posted to each of these pregnancy message boards. This method placed the responsibility of volunteering in this study on the participant and made it less intrusive to other members on the message boards who did not wish to participate. Once contact was made, the principle investigator answered any questions the participant had and the website with the actual survey link was emailed to the participant.

Design

There were three data collection points of prenatal, early and late postpartum. The prenatal data collection wave consisted of any time during the woman's third trimester of pregnancy, which was defined as falling between weeks 28 to week 42 of pregnancy. The early postpartum time periods was delineated from birth until 3 weeks and the late postpartum period was chosen to lie between 3 to 12 weeks postpartum. Birth to three weeks postpartum was chosen as the marker because at this time women are at the cusp of overcoming most breastfeeding problems. From three to twelve weeks postpartum most women have endured the trials and tribulations of many breastfeeding problems and have enough experience with breastfeeding to know whether they wish to continue or wean. Breastfeeding views were tracked from late pregnancy to the postpartum period because this is considered an ideal time to explore a woman's decision on how best to feed their own baby. The postpartum period is when most weaning occurs as evidenced by 73.8% of women reporting that they "ever breastfed" shortly

after birth to 26% who were exclusive breastfeeding at 3 months. It is important to bear in mind that the definitions of "ever breastfed" is varied where women who attempt only once at breastfeeding are placed into the same category as those who nurse every 2 to 3 hours around the clock.[6] These changes in breastfeeding rates show that many women decide to breastfeed as evidenced by the high initiation rate but somehow a change occurs from birth to 12 weeks that results in over half of those women weaning their infants. Open-ended questions regarding new mother's breastfeeding experiences during each data wave were used to explore the physical and mental changes that occur during these time periods.

Qualitative Strategy

The voices of this group of first time mothers were needed to contextualize the results of the quantitative measures in order to gain a more complete picture of breastfeeding. The combination of both quantitative and qualitative measures were used to form the foundation of a better method of teaching women how to breastfeed. Hinting at the influence of social construction on the changing views of breastfeeding in past decades, a strategy is needed that will allow a critical examination of what we already know as true.

The works of Foucault (1975, 1977, 1980) contribute to a new awareness of looking at what is right under our eyes and how power hierarchies can influence the structure of knowledge or knowing making his theories a good match for understanding breastfeeding as it can help reveal the underlying power structures inherent in the medical model that shape how women are taught how to breastfeed. If power produces knowledge as stated by Foucault (1980), the current state of breastfeeding is continuously being defined by the AAP with their recommendations and breastfeeding becomes not an intimate exchange between mother and infant but a series of

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[6] Any and Exclusive Breastfeeding Rates by Age among Children Born in 2004 http://www.cdc.gov/breastfeeding/data/NIS_data/2004/age.htm

empirical findings linking breastfeeding to physical benefits primarily for the infant. These differences in goals change the dynamics whereby the structure involved in teaching women how to breastfeed is set up to pressure mothers to breastfeed their infants. Neoliberalism adds to this pressure with its focus on risk reduction through the benefits of breastfeeding resulting in a lost of the conception of breastfeeding as a pleasurable and empowering experience, which could enable the view of breastfeeding to be equally beneficial to both infants and mothers. As a result, the power exerted by breastfeeding authorities becomes one of repression and prohibition that essentially prevents women from breastfeeding in the manner that is unique to their bodies and circumstances. We are seeing a trend where breastfeeding campaigns are beginning to include fear-based tactics to scare new mothers into breastfeeding their newborns (Wolf, 2007). It may be that in order to challenge the current breastfeeding paradigm, the power of repression and prohibition must be transformed to one that focuses on making breastfeeding a source of pleasure and embodied knowledge for women.

Critical discourse analyses based on the theoretical underpinnings of Foucault were used to examine power hierarchies, and how knowledge and truth are generated between first time mothers and medical professionals. Exposing the use of language in how knowledge and the truth are generated can be a powerful way to equalize the difference in authority between nursing mothers and the medical establishment. To reveal these power hierarchies may prove to be a vital step toward challenging the ideology of the Breast is Best where Foucault's emphasis on historical and cultural influences may explain the cyclical nature of breastfeeding. With the use of formula growing during the 1950s, breastfeeding was viewed as an act of ignorance and a sign of poverty. Women who viewed themselves as assimilated into Western culture and of a higher social status embraced the scientific marketing techniques of artificial formula (Litt, 1997). As

pediatricians touted the benefits of formula for infants, mothers were quick to introduce bottle-feeding to their infants as it symbolized affluence, social status, and upward mobility. As a result, a socioeconomic divide occurred where only families who had the financial means could afford the costly pediatric visits and purchase formula, and women who chose traditional methods of infant care and breastfed their infants were viewed as ignorant of Western customs and of poor social status.

But the tide has changed where breastfeeding is currently deemed the hallmark of good mothering practices, financial status, an educated mother and the epitome of intensive mothering. There seems to be a strong relationship linking the popularity of breastfeeding with women's success working outside of the home leading one to question whether it is a mere coincidence that intensive mothering began to flourish just as women began to gain strides in the workplace during the mid 1980s. Such a relationship has not been examined by breastfeeding researchers nor nursing professionals, making the use of critical discourse analysis all the more pertinent in examining how historical and cultural influences play a key role in how breastfeeding is viewed across time periods that have little to do with the beliefs that breastfeeding is a natural process or a fundamental right of the infant.

Although there is no single way to conduct critical discourse analysis, we began our analyses with suggestions by Huckin (1997) where responses were initially read in an uncritical manner. Responses from the open-ended questions were read as the initial step in documenting the variety of experiences these women experienced. A second reading was conducted to find patterns in their experiences. Depending on the question, responses were categorized as whether the woman had a positive or negative response or grouped to form a coherent story. Counts were generated to describe the overall theme of their initial breastfeeding experiences. A third reading

allowed themes to emerge from the women's responses and we found a trend of power struggles between mothers and medical professionals. A fourth reading allowed us to find exemplars to offer a snapshot of what these women learned or overcame. Depending on the scope of the question and the degree of the responses, additional readings were done to reveal sub-themes that gave richer descriptions of the women's experiences.

Selection Criteria

In order to maximize the statistical power of the research design, selection criteria for participation was as homogenous as possible as a way to reduce error variability. Selection criteria for inclusion in this project were women who:

1. planned to breastfed,
2. were primaparas (e.g., first time mothers),
3. expected a single child (e.g., no multiples),
4. were not experiencing any major complications during pregnancy, and
5. over 18 years of age

All efforts were made to find women who were racially and ethnically diverse (e.g., Caucasian, Asian, African American, Latina). A lottery system was set up with a prize of a $100.00 gift card to Babies "R" Us as an incentive for mothers each time they completed a set of questionnaires for each data wave. Every woman who completed all three phases of data collection had three chances to win a $100.00 gift card. The three winners were chosen randomly and sent a private email that requested an address to send their gift card. After each recipient received her gift card, her address was deleted from all email correspondence.

Consent Procedures

All women were encouraged to contact the principle investigator with any questions

and/or share concerns. Once concerns and/or questions were addressed, interested parties were sent an email embedded with a web link that was unique to the participant's email address that gave them access to the consent form to the online survey. This was not the actual questionnaire but the consent form as shown in Appendix K. Only the women who checked off that they agreed to participate were given access to the actual online questionnaire. Those who did not agree to participate or did not fit the criteria were routed to a webpage thanking them for their time and not allowed access to the online survey. Internet protocol addresses (IP) were collected to prevent multiple responses from a single participant.

Measures

Iowa Infant Feeding Attitude Scale. The Iowa Infant Feeding Attitude Scale (IIFAS) by De La Mora, Russell, Dungy, Losch, and Dusdieker (1999) was used to track changes in infant feeding preference across all three data collection points (please refer to Appendix C). The IIFAS was designed as a quick and effective way to measure maternal attitudes regarding infant feeding methods (e.g., breast or formula). Women were asked to indicate the extent to which they agreed or disagreed with each of the 17 statements using a 5-point Likert scale ranging from 1 (strong disagreement) to 5 (strong agreement). Approximately half of the statements are favorable to breastfeeding while the other half is favorable to formula feeding. Once the items marked with an asterisk were reverse scored, all the responses were summed to produce a unitary score where higher scores indicated a more positive attitude toward breastfeeding and lower scores indicated a favorable attitude toward infant formula. Psychometric results found the IIFAS was predictive of both decision-making in infant feeding method and actual feeding behavior. The coefficient alpha for the 17 items of this scale was

found to be highly reliable at 0.86. Total item-total correlations for the items on this scale were found to be positive and significant, ranging from 0.22 to 0.68. Pearson correlations between infant feeding choice and maternal attitude were found to be significant (r = 0.79). Internal consistency with this particular sample was acceptable at 0.79 with inter-item correlations ranging from -0.9 to 0.58. The benefits of using the IIFAS for this study entail assessing maternal affect not only during the prenatal period but also the early and late postpartum periods within the context of both methods of infant feeding.

Ways of Knowing Inventory. The Ways of Knowing Inventory (WOKI) is a 48-item questionnaire based on the work of Belenky et al. (1986) to measure each of the five stages of knowing (Buczynski, 1993). Buczynski designed this paper and pencil inventory as a less time consuming way to measure development stage and growth as compared to the lengthy interviews conducted by Belenky et al. (please refer to Appendix D). Item number 46 was omitted reducing the questionnaire to a total of 47 items (personal correspondence with Dr. Buczynski, 2008). Women answered each item using a four-point Likert scale from A (strongly disagree) to D (strongly agree). Testing of the WOKI in a sample of 348 Caucasian undergraduate students revealed 5 factors of silence, subjective knowledge, received knowledge, constructed knowledge and procedural knowledge. Their alpha coefficients are 0.69, 0.69, 0.72, 0.74, and 0.80, respectively. Each individual receives a score for each of the five dimensions, which gets divided by the total possible number of points for each subcategory. The highest percentage indicates the stage of knowing of that individual. Due to the fact that the subject population from the Belenky et al. study and the WOKI were originally geared toward undergraduate female students, examples specific to childbirth and breastfeeding were added to make the statements more relevant to our sample (e.g., when referring to authorities, the terms, “pediatricians,

physicians, OB/GYN, American Academy of Pediatrics" were added in parentheses). Reliability analyses with this sample of women were acceptable at 0.64, 0.68, 0.58, 0.48 and 0.72 for each of the 5 subscales of silence, received, subjective, procedural, and constructed knowledge.

Maternal Breastfeeding Evaluation Scale. The Maternal Breastfeeding Evaluation Scale (MBFES) constructed by Leff, Jefferis, Gagne (1994) was used to measure breastfeeding satisfaction (please refer to Appendix G). This scale consists of 30 items focusing on three categories consisting of maternal enjoyment/role attainment, infant satisfaction/growth and lifestyle/maternal body image that have been identified to accurately measure breastfeeding satisfaction. Cronbach's alphas for the scale and subscales were .93, .93, .88, and .80, respectively. Test-retest correlations ($n = 28$) were .93, .93, .94, and .82, respectively ($p < .001$ for all). Reliability analyses with this sample of mothers were high at 0.93 for the total MBFES score. Cronbach's alpha for each of the three subscales, maternal enjoyment/role attainment, infant satisfaction/growth and lifestyle/maternal body image were 0.91, 0.84 and 0.67, respectively. Maternal enjoyment and role attainment consisted of feeling positive towards the physical act and emotional aspects of breastfeeding. Infant satisfaction and growth referred to the infant expressing eagerness for and affective responses to nursing. Lifestyle included viewing breastfeeding as draining or interfering with daily activities and maternal body image comprised of feeling self conscious about nursing in public, leaking in public or feeling like a cow.

This scale was chosen for its emphasis on an integrative approach toward breastfeeding satisfaction that incorporates the needs of both mother and child as opposed to more traditional approaches to measuring breastfeeding that focus on a unitary precedence on breastfeeding duration and nutritional aspects.

Operational Definitions

The definition for breastfeeding was operationalized based on the work by Labbok and Krasover (1990) and Noel-Weiss, Rupp, Cragg, Bassett, and Woodend (2006), while infant agency was based on the Merriam-Webster dictionary.

Breastfeeding. Degree of breastfeeding was measured by having mothers choose one out of the eight categories of breastfeeding that best described how their infant was currently fed during the early and late postpartum periods. Based on the work of Labbok and Krasover (1990) and Noel-Weiss, Rupp, Cragg, Bassett, and Woodend (2006), breastfeeding was classified according to the eight categories to operationally define breastfeeding. These eight categories are as follows: (1) exclusive breastfeeding by breast only, (2) exclusive breastfeeding by breast with some expressed breast milk, (3) exclusive expressed breast milk only, (4) almost exclusive breastfeeding (breast milk and other fluids but not formula), (5) high breastfeeding (less than 1 bottle of formula per day), (6) partial breastfeeding (at least 1 bottle of formula per day), (7) token breastfeeding (breast given to comfort baby but not for nutrition), and (8) bottle-feeding (no breast milk at all). To adopt a standard definition of breastfeeding is crucial to this area of research as many studies often define breastfeeding as any time the infant spends at the breast with supplementation of formula or culturally related foods.

Infant agency. Agency is defined as the capacity, condition, or state of acting or of exerting power (Merriam-Webster, 2004). Infant agency is operationally defined as the capacity, condition, or state of acting or of exerting power by the infant as perceived by the mother. Examples of infant agency consist of physical reactions, such as exhibiting joy or distress, towards either breast- or bottle-feeding, which subsequently affects any future feeding method by the infant's mother or caregiver.

Procedures

Once participants gave consent via the online consent form and answered that they fit all the aforementioned criteria for inclusion in this study, they were allowed access to the first survey (prenatal data wave). Estimated due dates were used as a way to approximate the time to reestablish contact for the early postpartum data collection wave. A baby born between 37 and 40 weeks is considered full term and a normal pregnancy can last up to 42 weeks. Weekly emails were sent to the prenatal participants beginning at their 37th week mark to assess if they gave birth. A public website with the survey results will be emailed to all the mothers so they may view the findings of this study once it has been completed. This website can be password protected for extra security.

Theoretical breastfeeding: Prenatal data wave. Women in their third trimester of pregnancy were asked a variety of open- and close-ended questions to assess their prenatal views of breastfeeding as a way to gauge the role of outside sources of breastfeeding information on what they consider to be the truth (see Appendix B). We focused on whether prenatal expectations indicated an idealistic or realistic viewpoint, as these expectations would later be compared to the actual experience of breastfeeding. These comparisons would support whether women benefit from a continual perpetuation of a problem-free breastfeeding experience or expectations that included the possibility of problems that could arise once their infant was born. To further understand the effects of the current breastfeeding paradigm, women were asked to describe what the breastfeeding mantra, Breast is Best, meant to them. In addition, the number of mothers they knew who had breastfed or were breastfeeding were used as a baseline measurement to gauge whether they reached out to other mothers for support once their infant was born.

Quantitative measures included the online administration of the Iowa Infant Feeding Assessment Scale (IIFAS) and the Ways of Knowing Instrument (WOKI) as baseline measurements of breastfeeding preference and stage of knowing. Demographic information consisting of age, education level, race/ethnicity, birth experience, annual income, living situation, sexual orientation, and work situation were also collected during this data wave.

Breastfeeding realities: Early postpartum data wave. Mothers in the early postpartum period were asked basic details about their birth, including their infant's birth information (e.g., weight, length) as a way to acknowledge their rite of passage from pregnancy to motherhood (see Appendix F). With the arrival of their newborn, the degree of their infant's agency in nursing was assessed to gain more knowledge about the role of their infant in breastfeeding. Women were asked to describe their first attempt at breastfeeding in the hospital (if they gave birth in a hospital). Their initial responses were used to examine power hierarchies within a medical setting among nurses and physicians. Mothers were asked to compare their prenatal expectations with their actual experience to determine the degree theoretical breastfeeding from outside sources prepared them to breastfeed their own infant. Preparation was further measured by asking mothers if they experienced a breastfeeding situation where they felt unsure. If they did experience this situation, women were asked to describe how they resolved their problem and their responses were grouped according to a reliance on internal (e.g., listening to their gut instincts) or external (e.g., relying on lactation consultants or physicians) knowledge. The number of breastfeeding mothers they knew during this data wave was reassessed to track whether they reached out to other breastfeeding mothers. Lastly, mothers were asked to describe how their infant was currently fed based on the 8 classifications of breastfeeding suggested by Labbok & Krasover (1990) and Noel-Weiss, Rupp, Cragg, Bassett & Woodend, (2006). Recall

that these classifications consisted of (1) exclusive breastfeeding by breast only, (2) exclusive breastfeeding by breast with some expressed breast milk, (3) exclusive expressed breast milk only, (4) almost exclusive breastfeeding, (5) high breastfeeding, (6) partial breastfeeding, (7) token breastfeeding and (8) bottle-feeding. Quantitative measures (e.g., IIFAS, WOKI, and the Maternal Breastfeeding Evaluation Scale (MBFES) were randomly ordered when presented to mothers in subsequent data collection waves.

Sink or swim: Late postpartum data wave. At this time, women were asked to describe the biggest change they noticed about their infants to acknowledge their journey into motherhood and to assess changes in infant agency (see Appendix H). A second focus examined hindsight, particularly what the women learned about breastfeeding from the practical application of nursing their own child, what they learned about themselves in how they sought the truth and how they currently viewed breastfeeding experts. Emphasis was also placed on internal (e.g., listening to their gut instincts) or external (e.g., relying on lactation consultants or physicians) sources of knowledge. Mothers were again asked to describe whether their prenatal expectations affected their breastfeeding experience to identify patterns of change in their ways of knowing. Experiences of nursing in public were used to examine issues of maternal body image and the incorporation of a breastfeeding lifestyle. Looking towards the future with regards to breastfeeding, mothers were asked the degree of importance and confidence they had in nursing a sibling. Quantitative measures of the IIFAS, WOKI and the MBFES were also reassessed.

Data Collection and Recording

Online data collection was done using Survey Monkey and all data was encrypted using SSL (Secure Sockets Layer) encryption technology, which is a protocol developed for

transmitting private documents or information via the Internet. It essentially works through a cryptographic system that secures a connection between a client and a server. Many websites use this protocol to obtain confidential user information. Surveymonkey.com offers SSL encryption, which was used to send encrypted survey links to all women. The survey link and survey pages were encrypted during transmission from my account to each woman and vice versa as they were delivered back into my account to be analyzed. At the time of the study, Survey Monkey offered the VeriSign certificate Version 3, 128-bit encryption level.

Data Analyses

Due to the fact that there were no individual differences in trajectories of change over time, repeated measures analysis of variance (ANOVA) was used as a way to test for significant differences between data waves. Repeated measures ANOVA is preferred because of its robustness to missing data and commonly used in studies on learning because the participant serves as her own control making this statistical procedure more powerful. Post hoc tests were used to determine where the significant differences lie. Regression analyses were also used to determine which aspects of maternal breastfeeding satisfaction variables were predictors of the actual infant feeding method during the early and late postpartum periods.

Chapter 4. Results

> "When researchers listen to participants, we learn new things. Participants become more than transmitters of raw data to be refined by statistical procedures. They come to be active agents, the creators of the worlds they inhabit and the interpreters of their experiences." (Marecek, Fine & Kidder, 1997)

Participants

There were 127 pregnant women who expressed interest in the survey and were sent an online invitation to participate with 120 of these participants actually completing the prenatal online questionnaire. Please refer to Appendix M for participant demographics. The second data wave during the early postpartum period consisted of 110 women (8% attrition) and the last data wave during the late postpartum period consisted of 78 women (35% attrition). Appendix N shows the breakdown of attrition rates between each of the three data waves. The average age of the women was 28 years with the youngest mother being 18 and the oldest being 41 years old. All major categories of race/ethnicity were represented in this study with the majority of the mothers identifying as Caucasian. Level of education ranged from high school/GED to professional degrees or doctoral degrees with the majority of women having completed their bachelor's degree (see Figure 1). Living circumstances consisted of being single, cohabitating, dating, engaged, separated, with most being married and very confident about their relationship with their partner. Six mothers identified themselves as bisexual and the rest identified as heterosexual. Most of the women worked outside of the home (68%), were taking maternity leave and confident that they would return to work after their leave was over. Annual income showed more variety with a range of less than $20,000 to over $100,000 (see Figure 2). This sample of women was quite technologically savvy in their use of the Internet and fit the profile of individuals who are the most active in seeking health information online. According to Plantin and Daneback (2009), this online information seeking trend is believed to stem from

intensive mothering where focus is based on risk reduction, isolation of mothers from familial support due to increased mobilization, convenience, a sense of belonging generated from finding others in similar situations, and a generation of parents who are comfortable utilizing online resources. As pregnant women turn to the Internet for information, they may unknowingly be primed for breastfeeding failure as there is less control over the credentials of those who publish information on the Internet and unbeknownst to many women, the sponsors of these websites often have relationships with formula manufacturers. An additional caution in relying on information from the Internet is the focus on risk reduction and information overload, which can increase anxiety levels and overwhelm individual mothers who rely on websites for breastfeeding information. On the other hand, the Internet may alleviate the stress of pregnancy-related conditions (e.g., bed rest, preeclampsia, nausea, etc.) and motherhood by decreasing feelings of isolation and creating social networks among women. O'Connor and Madge (2004) found that online participants were attracted to these forums because they allowed them an avenue to not only receive information but to share their own knowledge and experiences. The ability to share and receive may buffer feelings of marginalization when experiences prove to be different from previous expectations. For younger first-time mothers, the Internet is often their first choice of information due to the accessibility with reference to time of day and the ability to connect with others in similar situations (Plantin & Madge, 2009). The perceived sense of anonymity may also make the use of these online forums attractive to individuals who have no experience in parenting or breastfeeding to bring up issues they feel embarrassed to ask in person or that are socially frowned upon.

Postpartum Changes in Actual Feeding Methods

We begin our results by examining actual feeding methods because this is the most

common variable assessed in breastfeeding studies. During the early postpartum period, we found high levels of breastfeeding initiation but breastfeeding levels decreased as more women weaned during the late postpartum period. Means and standard deviations for actual feeding outcome based on the above classifications are provided in Table 2. The Pearson correlation statistics indicated a significant positive association between the early and late data waves, confirming the within-subjects nature of the analysis, $r = 0.83$, $p < .001$. The null hypothesis of no difference between the actual mode of infant feeding during the early and late postpartum means was rejected, $t = -5.42$, $df = 74$, $p < .001$. We conclude that more infants in the early postpartum period were breastfed as compared to the same infants during the late postpartum period. On a similar note, there was significantly more mothers formula feeding their infants during the late postpartum period as compared to the early postpartum period (see Figure 7). Current breastfeeding trends note a similar pattern where weaning occurs during the early postpartum period and may suggest unknown barriers to breastfeeding that have yet to be identified by policy makers. In order to understand why this occurrence is so common, we examine the initial difficulties of breastfeeding in the early postpartum period and the prenatal experiences of women that prime them for this outcome.

Impact of Prenatal Expectations on Postpartum Realities

The majority of the women in this study came with expectations that they would have a vaginal birth (100%), delivering in a hospital (91%) and experience no complications (96%). In actuality, 77% of the women had a vaginal birth with 46% experiencing some birth complication ranging from being maternal-related (e.g., preeclampsia symptoms, slow progress, fever, homebirth transport, blood pressure reactions to epidural medications, tearing, excessive postpartum bleeding) to neonatal-related (e.g., breech position, fetal distress, umbilical cord

wrapped around their neck, meconium, premature rupture of membranes). Fifty-nine percent of the late postpartum mothers responded that their prenatal expectations did affect their experiences breastfeeding their baby with many feeling unprepared once their infant was born (see Figure 8).

Feeling unprepared. The impact of medical professionals and experts can greatly influence a first time mother's expectation of breastfeeding. Quite a few women mentioned how they were unprepared for the amount of pain and time it took to breastfeed their newborn infants. These feelings were supported by the results of the Maternal Breastfeeding Evaluation Scale (MBFES) which indicated a significant positive association between the total MBFES scores during the early and late postpartum periods ($r = 0.57$, $p < .001$). Significant mean differences were found in maternal breastfeeding satisfaction suggesting greater satisfaction during the late postpartum period as compared to the early postpartum period, $t(59) = -2.34$, $p < .05$. This difference may be due to the time consuming nature of breastfeeding a newborn who is still learning how to nurse effectively and needs to be fed approximately every 2 hours for the first few weeks of life. Such differences in maternal breastfeeding satisfaction may also suggest that new mothers are not adequately prepared for their first experience of breastfeeding but once they overcame the initial difficulties during the early postpartum period and adapted to a breastfeeding lifestyle, nursing became easier as both parties became more knowledgeable and able to establish a routine.

Qualitative analyses began with the women's responses to whether their early postpartum experiences were similar or dissimilar to their prenatal expectations of breastfeeding. Results indicated that 55% of their actual experience of breastfeeding was dissimilar to their prenatal expectations. Based on the fact that not all instances of dissimilar responses were negative with

some mothers expecting breastfeeding to be dreadful but were pleasantly surprised when nursing turned out to be painless, it was imperative to review the prenatal data on expectations and code those as either realistic (e.g., it may be painful but worthwhile), idealistic (e.g., we will both fall into each others arms and nurse in harmony), or having no expectations (e.g., I have no idea how this will turn out). Additional codes that emerged from the data included hopeful, difficult, painful, realistic, pleasant, positive, flexible, committed to making it work. The most common combination of terms women used to describe their prenatal expectations was hopeful and realistic which were combined to form the theme, hopeful realism. Women who were hopeful realists noted that they hoped for the best where they experienced little or no problems with breastfeeding but were prepared to persevere through difficulties because they understood the benefits that lay past the potential problems.

Once this was done for the prenatal data, the early postpartum responses were read and coded based on whether they matched their prenatal expectations or not. Once that was completed, patterns began to emerge from the words. Kylie's story exemplifies a pattern of realistic expectations that helped prepare her for the early postpartum period leading to her desired outcome where her son was exclusively breastfeed during both postpartum periods. Kylie is a 27-year-old software engineer who is expecting a son. She is Caucasian, married and college educated. Her prenatal expectations can be construed as realistic as shown by her response below.

> "I am going to give it my best shot. I'll talk to a lactation consultant and get all the good advice I can. That being said, if it doesn't work out for me I'm not going to beat myself up over it. I will make an honest effort, but if it doesn't work I won't feel terrible about formula feeding."

Her statements emphasize her degree of persistence and the importance of having access to good advice. She is not completely married to the concept of breastfeeding but holds a flexible

outlook where she will put in the effort needed but is open to formula as a viable alternative if breastfeeding does not work out. Once her son is born, she continues with this flexible mindset but is surprised at the amount of pain a bad latch could inflict. She stated:

> "I heard it can be difficult and that it can hurt, so I kinda knew what was coming. I'm surprised by how much a bad latch can hurt though." (Kylie, 27-year-old software engineer and mother to Jackson)

Kylie's realistic expectations helped prepare her for what was to transpire in the early postpartum period and her flexibility in feeding methods may have reduced anxiety and stress, which have been known to negatively affect milk production. She had an inkling that the initial weeks of breastfeeding could be uncomfortable but her prior mental preparation may have helped her persevere through those initial difficulties.

A consistent theme that emerged from the data was feeling surprised. Kylie felt surprised at the pain of a bad latch and critics may associate problems related to breastfeeding with disenchanted mothers but even mothers such as Natalie, a 28-year-old desk clerk with some college background, who did not experience major difficulties with breastfeeding also expressed a similar feeling of surprise. She chose to breastfeed her son to give him the health benefits associated with breastfeeding. Based on her mother's experience where she was unable to breastfeed due to insufficient milk, Natalie was worried about her milk production but was knowledgeable about different types of teas and ways to increase her production. In addition, she was also concerned about her short maternity leave as she could only afford to take 6 weeks off but hoped to schedule pumping sessions to express milk for her son. Natalie was happy that she was able to nurse her son shortly after his birth but expressed surprise when breastfeeding was time consuming and didn't always follow the book.

> "I wanted to able to breastfeed and I can, I'm very happy about it. But I really didn't think babies eat sooo much, sometimes 2 hours straight!! And I thought

> they eat every 3 hours - as the book says - oh no, he eat sometimes every hour. Dr said its normal, because he was born with small weight, he try to catch up :)" (Natalie, 28-year-old desk clerk and mother to Ryan Tyler James)

Natalie's response also highlights the role of physicians and literature in shaping breastfeeding information. Breastfeeding literature often portrays newborn behavior in very strict and narrow terms and many pregnant women rely on these guidelines but few realize that these principles often do not take into account the varying behaviors and nature of newborns or the unique physiology of maternal bodies which can lead to confusion and anxiety in new mothers.

Brianna is a 21-year old Caucasian make-up artist who experienced a traumatic birth that involved medical interventions. The added stress of the small yet normal size of her newborn son's mouth made her initial attempts at breastfeeding to be painful and difficult. When asked how her prenatal expectations affected her initial postpartum experiences at breastfeeding, she stated,

> "It was more painful and difficult than I ever anticipated, and this caused a ton of emotional distress because I had little support." Brianna, mother to Nicholas)

The lack of support from the hospital continued as her frantic phone calls to the lactation consultant were not returned, her son was losing weight, and the lactation department at her hospital told her to supplement with formula. She recalls,

> "I ended up calling the lactation department at the hospital I gave birth at, and they said to supplement formula, which I ended up doing because I was afraid. I didn't realize that the weight loss might have been due to the IV fluids during labor, and wish I would have at the time."

For laboring mothers who find themselves at the receiving end of medical interventions, the use of intravenous fluids is a common outcome in hospital births but few mothers and possibly medical professionals understand the effect of IV fluids on weight loss in the neonate. In newborns whose mothers have been given IV fluids during labor, a portion of their weight loss is

due to the shedding of maternal IV fluids and not necessarily their own birth weight (Noel-Weiss, Courant, & Woodend, 2008). As mothers become fearful of their infant's loss of weight, it is difficult to distinguish if the use of supplementing with formula is seen as a viable alternative in preventing further weight loss or lessening maternal fears. If supplementing with formula is used to reduce maternal fear, addressing these psychological issues may help new mothers breastfeed longer and under a less anxious mindset.

Mackenzie is a 33-year-old African American attorney who understood that breastfeeding would be a learning process for her and her baby. Although she and her husband had taken breastfeeding classes together, she knew that there would be a lot to learn once her son was born. Even with her realistic expectations, she still harbored expectations that breastfeeding would go smoothly.

> "I knew that there would be a lot for both of us to learn, but I didn't expect that my nipples would be so damaged, so quickly. I expected more of a fairy tale!" (Mackenzie, mother to Austin)

Mackenzie's narrative suggests that current breastfeeding information often leaves out the realities of breastfeeding and even though some mothers have realistic expectations, they still believe that things will turn out in an idyllic way. Similar to Brianna's feelings of fear, Mackenzie also expressed fear when her nipples were so damaged that her son was ingesting her own blood while he nursed.

> "My nipples were so damaged that Austin was ingesting a bit of blood with his milk. Right around the time my milk came in, he started spitting up, and the spit-up had brown and red bits of blood in it. This was incredibly disturbing (to us, not to him), and I was terrified that he was spitting up because I was essentially feeding him blood. My husband and mother calmed me down and convinced me that everything would be fine if I would just keep feeding him. We made it through that night, and then I called a lactation consultant in the morning to start working on our latch."

She expressed fear about how to remedy this situation and relied on her family for support during this time. In her situation, the lactation consultant offered help with her latch as opposed to Brianna's outcome where the lactation department suggested that she supplement with formula. It may be that Mackenzie's socioeconomic status, access to supportive people, age, and educational background allowed her more options in attaining breastfeeding help as opposed to Brianna who is younger and possibly less educated.

Last, we have Catherine who is a 33-year-old technical trainer and mother to her son, Sean. Similar to other mothers, she chose to breastfeed for the health benefits and held realistic expectations that breastfeeding could be difficult and that she would probably need assistance. Similar to Mackenzie with her realistic expectations, Catherine was also surprised by the commitment breastfeeding required.

> "… I was not prepared for just how demanding it is to be totally responsible for this task, and not be able to schedule anything around it because he can be hungry any time. You can't delegate this...it's all you, 24 hours a day. Other than that, I think my expectations were similar."

Not aware of the degree of commitment during the prenatal stage, many women were surprised at the dedication and change in lifestyle in being a breastfeeding mother. The commitment to breastfeeding is quite real, especially during the early postpartum period where newborns have a stomach the size of a walnut and need to be fed around the clock. These findings support the results of the Maternal Breastfeeding Evaluation Scale (MBFES) where maternal satisfaction was lower during the early postpartum period as compared to the late postpartum period. Even though much of the literature states that breastfed newborns need to be fed every 2 hours, the reality of that feeding schedule doesn't quite hit home until the newborn is brought home and this jarring reality may account for lower maternal satisfaction shortly after birth.

The theme of feeling surprised supports our belief that the current structure in breastfeeding education leaves a gap between theoretical and practical knowledge, especially in regards to viewing breastfeeding in shades of grey. The narratives of the women also highlight the impact of medical interventions and socioeconomic status on breastfeeding outcomes. In addition to these surprises, emotional aspects where many new mothers tied successful breastfeeding with good mothering was also evident as shown by the responses given by Addison, a 26-year-old, college educated police officer who is married and Caucasian. Here we find another example of hopeful realism.

> "I hope that the baby will naturally latch on, may be painful at first, but will progressively get better."

Unlike Kylie's experience, Addison's early postpartum experience differed from her prenatal expectations. Her reaction was of surprise stemmed from having to deal with more problems than she originally expected and the emotional side of breastfeeding.

> "I never expected to have so many problems with breastfeeding. I knew it would possibly be difficult, but I did not expect it to effect (affect) me emotionally." (Addison, 26-year-old police officer and mother to daughter Chloe)

For many breastfeeding mothers, nursing their child is a deeply emotional experience but formal breastfeeding education, which is where the majority of these first time mothers gather their information, seems reluctant to include this aspect in their curriculum. It may be that the act of breastfeeding elicits a sense of unease as it challenges the commonly held view of breasts as sexual as opposed to functional.

Another aspect that invoked feelings of unpreparedness was adjusting to a breastfeeding lifestyle. Jocelyn is a 35-year-old Caucasian teacher with her master's degree in education and mother to daughter, Lily. Her prenatal expectations are hopeful but cautious which was another prevailing theme in this set of narratives. She expresses that she is wary of being a "slave" to her

baby, which could be construed in a variety of ways such as being overwhelmed by motherhood, engaged in intensive motherhood, etc. It is only after we read her early postpartum experiences do we gain a clearer understanding of her reference to "slave."

> "I hope I can enjoy it, I hope my baby responds well to it, I hope I don't feel like a 'slave' to my baby too much (I have heard this is possible)"

Jocelyn is also surprised by her early postpartum experience and we find that her reference to "slave" is closer to the overwhelming nature of caring for a newborn.

> "It's a lot more challenging & time consuming than I thought (or rather I guess I never REALLY thought too much about it)."

Her narrative on feeling emotionally drained is another often-neglected secret when educating women on breastfeeding. Her emphasis of "never REALLY thought too much about it" is evidence that current sources of breastfeeding education reinforce a one-sided view of breastfeeding that often leaves much to be desired when new mothers find themselves unpleasantly surprised when confronted with aspects of nursing that are typical yet rarely discussed. To neglect these factors and focus primarily on the benefits of breastfeeding may leave many first time mothers vulnerable during the early postpartum period. A closer look at the 3 subscales (maternal enjoyment/role attainment, infant satisfaction/growth, and lifestyle/maternal body image) of the MBFES found lifestyle/maternal body image to be significantly different between the early and late postpartum periods suggesting that lifestyle and maternal body image influenced breastfeeding satisfaction moreso during the late postpartum period as opposed to the early postpartum period, $t(59) = -3.18$, $p < .01$. This finding suggests the importance of acknowledging and preparing women for the adjustments integral to a breastfeeding lifestyle may prolong breastfeeding and result in a more satisfying outcome. In addition, 87% percent of the mothers in the late postpartum period stated that there was

something they would change about their experience. These findings continue to support the fact that changes in lifestyle and body image are important topics to address with pregnant and early postpartum women. These may be some of the surprises the women in Hoddinott and Pill's (1999) study had referred to as secrecy during the early postpartum period. If we work to dispel the mysteries and rarely discussed topics around postpartum breastfeeding, women may be better equipped to make informed choices on how best to feed their infants. Other countries have breastfeeding psychologists to help women make the emotional transition of breastfeeding easier and address the emotional aspects inherent in breastfeeding but the United States seems to be lacking in this area.

As mentioned earlier, not all differences in expectations were negative as there was a fair number of women who expected breastfeeding to be more difficult but were pleasantly surprised when it turned out easier than they expected. Kaylee is 28-year-old African-American woman who completed her master's degree and not at all confident that she would return to work once her son was born. Her prenatal expectations showed a sense of hopeful optimism that was also quite realistic. She stated that "it probably won't be easy at first, but nothing worthwhile ever is!" Once her son Justin was born, her early postpartum response finds her pleasantly surprised that her prenatal fears of difficulty were unfounded.

> "i expected more pain and more difficulty in getting him to latch and eat well. i really thought it would be more of an uphill battle, but we both fell into things very naturally." (Kaylee, 28-year-old mother to Justin)

Kaylee's narrative alludes to the role of infants in shaping early breastfeeding experiences with her remark that they "both fell into a routine very naturally." We shall see later in more detail how infants are active players in breastfeeding outcomes. To fall into things naturally suggests

that breastfeeding relationships are flexible and do not have to occur under strict recommendations.

Other mothers translated disparities between expectations and reality into distrust in their own bodies, especially in terms of milk production. The focus on neonatal weight gain by medical professionals often increases the degree of mistrust in mothers, which tends to reduce maternal confidence. Alexis is a 30-year-old African and Native American woman who is living with her partner and mother to Joseph William. She has completed some college and does not work outside of the home. Her prenatal expectations also fell under the category of hopeful realism.

> "I hope it is easy, natural, bonding experience for myself and my child, I expect it to be challenging, but the nutritional benefits will outweigh whatever pain or discomfort I may experience to give him what I feel he needs."

Her words denote a commitment to making it work and that even though she expressed feelings that the initial attempts at breastfeeding would be difficult, she was willing to focus on the benefits as opposed to the costs.

> "Breastfeeding exclusively is far more involved and frequent than I ever imagined. It's also exhausting and challenging in that you are concerned about if the baby is getting enough to eat, constantly worried about what you're eating, how it may be affecting him, and if you are out of milk and he wants more..feeling conflicted about trusting your body to produce more and if you starving your baby" (Alexis, mother to Joseph William)

Alexis reached a crossroad where she wanted to trust her own body but was concerned about outside sources telling mothers they were starving their babies. The medical community successfully scares new mothers with this fear, which is mostly untrue due to the layer of fat full-term infants can live off of as their mother's milk comes in. Fears of starving her child, having enough milk, and monitoring her diet lest it negatively affect her child are classic examples of everyday concerns of nursing mothers. Her narrative suggests that these issues were not

resolved or addressed during her prenatal breastfeeding classes or in the breastfeeding literature leading one to question the adequacy of preparation provided by common sources of breastfeeding information.

Power hierarchy. The common fear of starving one's infant points to the power hierarchy, which stresses the surveillance and control of patients (Foucault, 1975). These narratives reflect many of the fears perpetuated by living in a neoliberal culture where mothers are responsible for reducing all risks, real or imaginary, to their infants. Nevaeh is a 39-year-old Caucasian archaeologist who held strong feelings about breastfeeding after learning about the unethical marketing tactics of formula manufacturers in college. Her strong beliefs in breastfeeding did not prevent formula from being introduced to her son as her development of preeclampsia sparked a downward spiral resulting in medical interventions, neonatal intensive care units, irregular heartbeats, and hospital personnel telling her that nursing would stress out her infant son which eventually led to formula supplementation.

> "Sometimes being overcautious is a bad thing. I would also have gotten a few second opinions about breastfeeding in the NICU." (Nevaeh, mother to Colin)

Rather than taking the time to work closely with Nevaeh and her son, Colin to assess and problem-solve breastfeeding issues, hospital professionals continued to suggest supplementing with infant formula. With pressure from authorities to supplement and seeing one's own infant quickly drink a bottle of formula, other mothers such as Katie often decide that they made the correct choice without realizing that their pediatricians may be uninformed of the ways to assist breastfeeding or that artificial nipples are designed to allow the formula to flow quickly with little action from their newborn as compared to nursing.

> "That it made me sad when he eats from a bottle. For some reason, I get jealous because I feel like feeding him is my job and I feel bad like I am doing something wrong." (Katie, 24-year-old stay at home mother to Brian Eric Adrian)

Katie's reaction indicates how her infant can impact her own sense of competency in feeding decisions. In some instances, pediatricians, maternity staff and formula manufacturers may use these reactions to convince new mothers to supplement with formula.

Vanessa is a 28-year-old mother who gave birth to her daughter, Katherine. She chose to breastfeed due to the health benefits for her infant but also for financial reasons as she mentioned that they were on a tight budget.

> "I know its natural, best for the baby, free & takes less work. We don't really have a choice as we are on a very tight budget, but I have always assumed and wanted to breastfeed. It is the only way I imagine feeding my baby."

In her narrative below, the maternity nurses point the finger of blame on her when Katherine's weight falls too low. Rather than working with the new mother to make sure lactation is established, the hospital staff seems more intent on blaming mothers who are struggling to master breastfeeding and accusing them of purposely starving their infants.

> "I thought my baby would let me know when she was hungry, but the nurses said I wasn't feeding her enough. I have since heard that csection babies are plumped up from all the IV fluids the mother has and that they don't really lose as much woeght (weight) as the hospital thinks. I think that this was the case with us. They made me feel like I was not doing a good job." (Vanessa, 28-year-old mother to Katherine)

Vanessa's belief about the relationship between her infant's weight loss and intravenous (IV) fluids has been suggested by a few researchers in the nursing and medical field where neonatal weight loss is related to the amount of IV fluids given to the mother during labor and delivery. It was found that the newborns of mothers who had IVs tended to lose more weight as compared to newborns whose mothers were not given IV fluids (Merry & Montgomery, 2000). In actuality, the greater weight loss in infants whose mothers were given IV fluids was due to the shedding of maternal IV fluids and not necessarily the infant's actual birth weight. In many hospitals, it is a

routine procedure to have laboring women hooked up to an IV for fear of medical emergencies that require instant access to a mother's circulatory system. Vanessa's knowledge of this lesser known fact suggests that she is familiar with medical research and able to critically examine the suggestions of so-called "experts" in the field. Having given birth in a hospital setting, her knowledge seems to have been dismissed by the medical staff making her feel she was the source of her newborn's feeding problems. As women were encouraged to view infant feeding in terms of strict dichotomies during the prenatal period, expectations often led women to feel conflicted, confused or fearful of exerting their own decisions.

On Breastfeeding Binaries: Breast = Good. Formula = Bad.

The most prevalent reason women stated when asked to tell a story on why they chose to breastfeed comprised of health benefits to their infants (please refer to Appendix M for a comprehensive list of responses). A closer look at their responses found a trend where breastfeeding was initially viewed as the natural thing for them to do once they became mothers. This mindset incited beliefs on the inferiority of formula that led to attacks on mothers who choose to formula feed their infants. These strong opinions may be due to the fact that the women in this study were still pregnant and had yet to experience the trials and tribulations of breastfeeding resulting in a naïve perspective. The fact that they were forming breastfeeding expectations based only on theory as opposed to a tacit knowledge may readily create an environment of judgment and character assassinations. Madelyn's story exemplifies this pattern of behavior.

Breastfeeding as black and white. Madelyn was 29 years old when she participated in this study. She is a college educated Caucasian woman who was separated from her partner. Similar to the majority of women in this study, she chose to breastfeed because she believed

breastfeeding was the best nutritional choice for her baby. Her prenatal expectations were realistic as she was aware that breastfeeding could be difficult but also one of life's most rewarding experiences. In addition to these views, she expressed strong beliefs that formula was an inferior product when compared to breastfeeding, which was consistent with the majority of responses women gave when asked to interpret the mantra, Breast is Best. She was critical of formula companies and their practices, noting how marketing campaigns greatly shape public acceptance of formula. She had little contact with other breastfeeding mothers and had never witnessed a mother nursing in public but was a proponent of natural childbirth. Her prenatal views on breastfeeding were quite strong as shown below.

> "I think perhaps that formula is one of those things that is really a fabulous marketing campaign. Leading us to believe that A) breast feeding isn't important B) formula is just as good as breast feeding and C) somehow as women were are incapable of taking care of an infant without formula. I am not sure where my inner drive comes from to breastfeed. But I know that I want to do it. And I don't buy that so many women can't do it. I am disappointed that so many women seem to say they literally were physically unable to do it. When I believe that it is a choice to either stick it out, or not. And when women don't even have the self-independence to say, I CHOOSE not to breastfeed. It bothers me. I would have more respect for their choices, than for what they portray as something out of their control."

Madelyn seems to view mothers as fitting into one of two categories, those who want to breastfeed and those who want to formula feed. This issue was often seen as black and white without any room for negotiating. Women who chose to breastfeed were placed on a pedestal while mothers who chose to formula feed were considered selfish and ignorant. Although many women commented on the inferiority of formula, Madelyn's degree of hostility increased and became personal when she discussed mothers who used formula.

> "I have a friend who recently went in with the same ideas that I did. And surprise, surprise, she's using formula now. Never even tried to breastfeed at home, gave up before she left the hospital. I can't figure out what the trap is that women are falling into. I just don't want to fall into it. So I sincerely hope, that breastfeeding,

while challenging in the beginning will turn out OK once I get the hang of it."

Her narrative implies that women who wean are the ones who give up too easily and are not dedicated enough to give their children the best. Her reaction to her friend may be viewed as sarcastic and demeaning as she implied that her friend was feeding her baby formula based on personal reasons (e.g., "gave up") as opposed to extenuating circumstances. Her reaction suggests that mothers choose to stop breastfeeding and other factors such as lack of support, supply issues, or exhaustion do not influence breastfeeding outcome. Although she expresses uncertainty as to why women fall into "the trap" where they are unable to breastfeed, she judges her friend's outcome as due to a lack of character. Madelyn was not the only woman who believed in intensive motherhood as other women felt the decision to breastfeed was also simple and obvious. Mya, a 23-year-old woman of Caucasian and Mexican heritage shared a similar view.

> "It just seems like the right thing to do. The pros to breastfeeding are just so obvious and medically backed that it seems silly not to. If you don't have time or just don't want to breastfeed, what other things in your child's life won't you have time for? It is a huge deal to sacrifice what you want for this new little person, but I don't understand how women make the choice to put their "needs" first. It's instinctual, or it should be. As a mom, it should be all about your child. Breastfeeding, when medically possible, should be the only option."

Mya had strong opinions of women who formula feed as shown by her narrative. Similar to Madelyn, she also viewed breastfeeding as the "right" thing to do which covertly implies that using formula is the wrong/bad choice for mothers. Her inclusion of "medically backed" is consistent with how the Breast is Best campaign uses research citing the benefits of breastfeeding as a way to convince women to breastfeed when the portrayal of breastfeeding in this manner does not take into account the complexity needed to sustain a breastfeeding relationship. Knowing the benefits of breastfeeding may aid in the decision of how best to feed

one's infant but it does little to provide the support needed to sustain a prolonged period of breastfeeding.

Other responses seem to highlight breastfeeding as a personal choice and the opinion that mothers need to suck it up to overcome problems/pain. The comments from these two women may seem contradictory at first glance where Madelyn focuses on listening to outside authorities (e.g., medical researchers) regarding the benefits of breastfeeding while Mya speaks of being held personally responsible for breastfeeding outcomes but their words may be two sides of the same coin where both narratives suggest that women are being controlled by the external (e.g., policy makers, American Academy of Pediatrics, WHO, etc.) definitions of breastfeeding that often neglect their own accounts of what breastfeeding means to them. Regardless of a woman's chosen method of infant feeding, there seems to be an unfair burden of responsibility on women's shoulders as evidenced by comments noting the guilt their own mothers still carried for not breastfeeding them. Kaylee, a 28-year-old African American woman whom we met earlier recalls her health problems as a child and mentions the guilt her mom still feels for not breastfeeding her.

> "i have had a lot of difficulty with my immune system over the years, and my mother blames herself for not BFing (breastfeeding) me and providing me that early boost of immunity. i want to help my baby avoid some of the allergies and illnesses i've had by building up his immune system the most natural way possible."

Such lasting guilt may be intensified with the degree of risk reduction in today's neoliberalist society.

Reviewing the reasons why women chose to breastfed led to the view of breastfeeding as a binary where the breast is seen as good and formula as inferior and dangerous to infants. The view of formula as dangerous to infants may be a growing trend with breastfeeding advocates

suggesting that maternity nurses need to gather informed consent from mothers who give birth in hospital settings and wish to formula feed their infants, regarding the health dangers inherent in formula feeding (personal communication, Burger, 2011). It is currently unknown how these tactic will affect breastfeeding outcome but it may very well result in a backlash where mothers face additional pressure to breastfeed and guilt from using formula. The data from this group of first time mothers highlighted an underlying pressure to breastfeed where the slew of health benefits conferred from breastfeeding resulted in some women feeling that there was no other option than to breastfeed. As women are lulled into the Breast is Best mentality, they may not realize that the price to pay for subscribing to this belief system is a subtle yet robust pressure to breastfeed.

Robustness of the Breast is Best campaign. The robustness of the Breast is Best ideology was evident as all the women cited the health benefits of breastfeeding and the superiority of breastfeeding over formula feeding. Even though some women were critical of the Breast is Best mantra, they still agreed that breastfeeding was the best way to nourish infants. The simplicity of Breast is Best creates a dichotomy between breast and formula feeding whereby the structure of current breastfeeding education encourages a single and correct way to feed one's infant. As a result, this simplicity may result in anxiety and stress when individual breastfeeding experiences differ from what they were taught during the prenatal period. When such a disparity is experienced, women can either doubt their experiences and rely on outside authorities to decide what they should do or they can disregard expert advice and forge ahead on their own path.

The findings from the Iowa Infant Feeding Attitude Scale (IIFAS) support the robustness of the Breast is Best campaign. The IIFAS was used to examine the adequacy of current

methods used to teach women how to breastfeed. It was hypothesized that no changes in infant feeding preference would provide evidence that current breastfeeding education was effective in teaching women how to breastfeed. If women felt that they learned enough about breastfeeding during the prenatal assessment period, they would be adequately prepared to breastfeed their infants during the early and late postpartum periods. There were no significant mean differences in breastfeeding preference across each of the three data waves, $F(2, 142) = 0.038$, n.s. Mauchly's test indicated that the assumption of sphericity was violated, $\chi^2(2) = 7.15$, $p < .05$), resulting in a correction of the degrees of freedom using the Huynh-Feldt estimates of sphericity ($\varepsilon = .93$). Full descriptive analyses can be found in Table. 1. It is a general rule that skewness and kurtosis scores that are close to zero are not a concern (Tabachnick & Fidell, 1996). A closer examination of changes across time with regards to how infants were actually fed during the early and late postpartum periods found that even though mothers weaned their infants during the late postpartum period, they still held beliefs that breastfeeding was the preferred choice of infant feeding method. In other words, mothers who were using formula to feed their infants did not change their breastfeeding preference and still felt strongly that breast was best. This finding led us to a conundrum and prompted additional investigation as to why IIFAS scores for these women did not undergo any change. Our investigation led us to further examine the subtle messages first time mothers internalize from current means of breastfeeding information and how subscribing to the current breastfeeding paradigm where Breast is Best may inadvertently sabotage breastfeeding success.

With the successful marketing of the Breast is Best mantra to the general public with 95% of this sample having heard of the mantra, few have examined the impact of how this campaign may pressure women to breastfeed and encourage passing judgment on women as

good or bad mothers. With so many women familiar with the Breast is Best ideology, we explore in greater depth the meaning of this mantra during the prenatal period. In analyzing the narratives, there was a consistent pattern where many mothers expressed a strict adherence to this dichotomy of right and wrong. Maya is a 26-year-old Caucasian banking officer who has realistic views of breastfeeding. She understands that the best way to learn about breastfeeding is through her own personal experience of nursing her daughter. She has strong feelings about motherhood and believes that her sole purpose on earth is to become a mother. She stated "… I feel that by using the oldest and truest of bonding techniques, I can show the baby from the first moments how much I love him/her." For Maya, breastfeeding is viewed as a show of affection for her child and to be unable to breastfeed can be construed as not loving one's child. When asked to define what Breast is Best means to her, she stated the following:

> "This statement means, very literally, exactly what it states. Breastfeeding is what our bodies are built to do. Mother's milk is what our babies bodies are built to receive. I suppose I simply believe that hundred's of thousands of years of evolution can't be wrong." (Maya, mother to Kaylee)

Maya's response shows a strong historical tie to evolution and an essentialism of how mother's bodies are supposed to perform for their offspring. Once her daughter was born, she experienced difficulties with her supply and supplemented with formula in hopes of reducing her daughter's jaundice levels before they became "worrisome." The introduction of the bottle led to not enough stimulation to her own breasts which impacted her milk supply and additional fears of jaundice led her to express her milk as a way to monitor her daughter's intake. She also remarked that "I didn't know what to do, or if there was anything I could do to get the milk to come in faster" when her worries about jaundice and concerted efforts to monitor her daughter's intake with pumping were the reasons why her milk supply was not getting the stimulation it needed to become established during the first few days of postpartum.

Mya whom we met earlier was one of the mothers who held strong opinions regarding mothers who used formula to feed their infants. Her reaction to the Breast is Best mantra is shown below and the tone of her reaction continues her beliefs in breastfeeding as sharing a strong tie to the sacrifice and selfless nature of good mothering.

> "it's natural, healthy, far cheaper than formula, and just seems like the selfless option when choosing breast/formula." (Mya, mother to Mary)

She also is looking forward to nursing in public because she finds that act to reinforce her strong stance towards breastfeeding. Once her daughter, Mary was born, Mya noted problems with her milk supply and exhibited distress when she needed to supplement with formula.

> "We had trouble. I didn't have any milk at all, even by day 5 I only could pump out a few drops. Mary was turning into a formula baby. My nipples were sore from letting her nurse on demand - this was quite often because she wasn't really getting much from me. I gave her an ounce of formula to tide her over every few hours. I remember feeling powerless and felt bad that my baby was such a good nurser and I a terrible nurse!!"

The ability for a woman to be able to express milk using a breast pump depends on a number of factors. Costly hospital grade pumps are usually the more effective ones but some women are unable to express their milk using the best pumps, which has no bearing on their actual milk production. Even though Mya's pumping is not an accurate indication of her milk supply, her output did cast doubt in her mind regarding her ability to produce enough milk for her daughter.

> "I had hoped to have enough milk to feed her! I really thought it was all a matter of supply and demand, but my body doesn't understand that equation. Then after taking herbs and now prescription med. Regalin, my body is responding a bit better to pumping and Mary's demand. I NEVER expected to be SO FULL it hurt every night and dry out by early afternoon."

Mya's belief in the supply and demand cycles of milk production is commonly taught to women who participate in breastfeeding classes and within the published literature. What they fail to mention are the psychological aspects that can also affect one's supply. In Mya's case, she was

stressed from the lack of output from the pump and the belief that her body was not able to supply her daughter's demand. These two thoughts resulted in a downward spiral into psychologically induced insufficient milk syndrome. The experiences of Maya and Mya share not only the robustness of the Breast is Best mentality but the effects of individual belief systems on breastfeeding outcome.

If the psychological state of mothers can affect milk production, we need to identify alternative ways of interpreting the Breast is Best or create a new mantra that will lead to a less stressful outcome. Mary is a 20-year-old stay at home wife who has a strong religious background. Although some may think that breastfeeding has little or no connection to God, Mary's narrative offers us a unique outlook into her breastfeeding venture. She begins her narrative linking God with breast milk.

> "God designed breastmilk for our babies, so therefore, it is the best possible nutrition they can get. Breastmilk is living tissue that changes based on the baby's specific needs - something that formula can never do. It is the natural way to feed a baby and overall the wisest decision a mother can make if it is possible for her." (Mary, mother to Rachel)

Mary offers a unique perspective in how she interprets the Breast is Best. From her multiple references to God in all her narratives, she can be construed as being a devoted religious woman and it is this devotion that lessens her anxiety and fear of not producing enough milk. Ironically, it is her trust in God to create the best way for babies to be nourished through breastfeeding that gives her a definition of breastfeeding that has not been influenced by outside policy makers. When asked about the impact of her prenatal expectations, she expressed a cavalier attitude where she was determined but not nervous or concerned about breastfeeding because she knew that was how God designed feeding between mothers and infants.

> "I wouldn't say my expectations had much of an impact because I didn't really have any. I was determined to breastfeed, so I stuck with it...it's that simple.

> Thankfully it wasn't rough at all for me at the beginning and even if it had been, my husband is very supportive and encouraging about it. I also wasn't nervous or concerned about nursing...it's just what I decided to do because that's how God designed things. Breastfeeding has been a huge blessing through and through."

Due to her belief system and religiosity, her experience in breastfeeding is quite different from Maya and Mya who were trying to fit their experiences into the definitions set by policy makers, lactation consultants, breastfeeding classes, and breastfeeding literature. In some ways, the belief that God created a perfect feeding system between mother and infant resulted in Mary having a less stressful experience. Even when she experienced a breastfeeding related problem, she didn't turn to experts but to other nursing women from her church. She actually stated that she has little confidence in the words of experts. When asked if she considered herself a breastfeeding expert, her response conveyed a simplicity that was different when compared to the complicated tactics policy makers use to convince women to breastfeed.

> "Not in the sense that I'd be writing a book advising women on it. As I said before, it's pretty simple...God makes things in a way that they are easily understood. We complicate them. There's not much to breastfeeding, so I wouldn't say it takes much to be an 'expert'."

It seems like common sense but new mothers may benefit from explanations of how to breastfeed in ways that are easy to understand. In some ways, the scientific and medical community seems to have complicated breastfeeding in ways that disempower women leaving little room for them to seek answers from within and have confidence in their own maternal bodies. Some may criticize Mary for allowing God to control her experiences in breastfeeding but an alternative explanation may include that having faith in one's body is important for breastfeeding as the work of Newton (1958) has suggested. If Mary believes that God created the perfect feeding system between mothers and infants, her degree of doubt and anxiety of not producing enough milk, needing to rely on physician advice, or viewing breastfeeding as an

activity that must be monitored by medical professionals are greatly diminished. Mary's experience is not to provide a model of breastfeeding that is based on religious faith but to highlight the impact of psychology on breastfeeding outcome. In Mary's situation, her faith helped her continue to breastfeed.

The experiences of Maya, Mya, and Mary suggest the importance of psychology in breastfeeding outcome and expose instances where the current breastfeeding model may unintentionally sabotage breastfeeding outcome. Although Mary's experiences offer an alternative way of tracing the origins of beliefs in breastfeeding, the experiences of Maya and Mya highlight the impact of relying on external definitions of breastfeeding, which can unknowingly impede efforts to breastfeed and how psychological factors can either encumber milk production or foster faith that maternal bodies can nourish infants. This describes the thinking behind policy makers who are unaware of or ignore the obstacles they have created within the current breastfeeding paradigm that often scapegoat mothers for weaning their infants. Unfortunately, we find more instances where mothers continue this one-dimensional view of feeding choice without considering other factors that can influence a woman's decision prompting us to wonder if current breastfeeding paradigms encourage simplistic thinking as a means to prevent women from critiquing the current way breastfeeding is taught while reinstating the status quo where failure to breastfeed is viewed as a self induced failure. If this is true, is there a way for women to resist these strategies?

Resisting the Breast is Best.

Not all women viewed breastfeeding in a dichotomous manner. Angela is a 26-year-old holistic animal therapist & photographer who stated she was currently on WIC (Women, Infant, and Children Program) due to a layoff. She also noted that she would rather not accept any more

money from the government since she can provide for her son through breastfeeding. Angela encountered problems with the medical staff as she attempted to nurse her son, Lucas. When asked to define what Breast is Best means to her, she stated the following.

> "That breastfeeding is the best available method of feeding your child. But is not the only correct way." (Angela, mother to Lucas)

Angela's response breaks free from the Breast is Best campaign by acknowledging that there are other correct ways to feed one's child. It is this flexibility in thinking that can result in a more positive and less anxiety-prone experience. Other mothers also shared this mindset. Ariana, a 38-year-old professor who grew up seeing her mother nurse her younger brother, believes that breastfeeding may be physically and psychologically demanding but the payoff can be great as a mother and woman. She shares a similar view as Angela with her response:

> "Breastfeeding, when possible, is the best choice for both mother and baby, offering health benefits to both and a bonding experience for mother and baby." (Ariana, mother to Makayla)

Angela and Ariana both acknowledged the superiority of breastfeeding over formula but exhibited flexibility in their decision-making strategies. Although they advocated the plentitude of health benefits, they were careful to include statements that allowed more leeway when it came to breastfeeding. These women may be aware of the difficulties in breastfeeding and wanted to acknowledge that although breast is best, it may not be the only way to feed an infant. Such careful wording may be a sign that they are mentally preparing themselves for a way out after publicly acknowledging that they would breastfeed and anticipating the possibility of weaning due to unforeseen reasons but it may also suggest a way of coping that aims to break free from the stress inherent in the dichotomies we witnessed earlier.

> "I still have questions and am learning new things all the time." (Angela, mother to Lucas)

Angela's response reveals openness to learning and acknowledges that there is still much to learn with regards to breastfeeding. She is tolerant of the fact that she does not have all the answers to her questions and understands that she is constantly learning about breastfeeding by nursing her son. On a related note, Ariana embraces a similar attitude with her narrative below.

> "There is a gradual process of balancing my body's production with my baby's needs and eating habits." (Ariana, mother to Makayla)

She seems to believe that learning how to breastfeed is a continual process that cannot be completed within a set period of time but occurs gradually, taking time for her body to attune to the needs of her daughter. According to Ariana, breastfeeding is a balance between maternal and infant bodies and her narrative suggests that is where emphasis on breastfeeding should lie as opposed to outside experts.

The openness revealed by these two mothers also challenges the notion of time when it comes to breastfeeding and may be an additional method of reducing maternal stress. Angela and Ariana seem more comfortable with the issue of time by not expressing worry that there was a set deadline for them to master breastfeeding. In many ways, Angela and Ariana both acknowledge the importance of practical breastfeeding where they are actively learning how to breastfeed by going through the motions in nursing their infants. In their narratives, we see less reliance on standardized information from published texts or the words of experts, which can convey a linear progression with definitive rules (e.g., to maintain your milk supply, you must feed the newborn every 2 hours for 20 minutes on each breast and look for "X" number of wet diapers) to a more individualized and personal outlook. They were more tolerant of the ambiguity that is characteristic of breastfeeding and receptive to the fact that breastfeeding can entail a continual state of learning. Their words convey a sense that as the needs of their bodies

and infants change, so will their degree of breastfeeding knowledge. In some ways, Angela and Ariana share a similar faith as Mary with her references to God.

As we move on to the narratives by Amy and Autumn, we continue to see a trend where women believe breastfeeding should focus more on the individual mother and the decision to nurse should be a personal one. Amy is a 33-year-old teacher who believed in not only the physical demands in breastfeeding but also expressed the importance of psychological and emotional factors. She grew up with a normalized view of breastfeeding having been breastfed as a child and seeing her siblings nursed by their mother. The statement below is indicative of how Amy believes that advocates are pressuring women to breastfeed and in essence taking their power away from making decisions that should be based on personal needs.

> "It makes me think that people are promoting (pushing) breast feeding on women who should be left to make their own very personal decisions." (Amy, mother to Paige)

She acknowledges that the decision to breastfeed is an intimate one that should not be influenced by others. Her viewpoint suggests that powerful others are pressuring women to breastfeed under circumstances that may not be a good match to their own personal needs. Amy shares an interesting thought in her narrative regarding expectations of how breastfeeding would turn out for her.

> "I am trying to not have expectations of any sort regarding my baby's birth. However, I certainly hope that we get the hang of breastfeeding quickly and that neither of us finds it too taxing. I am trying to mentally prepare myself for a variety of outcomes so as to not be disappointed in expecting perfection."

It is her last sentence that is striking as it demonstrates a sense of flexibility similar to Angela and Ariana. The fact that she is not committed to a single outcome can lessen the degree of stress when opportunities present themselves in a way that is unexpected. Amy's mindset moves away from a perfectionist view that is often portrayed through formal means of teaching women

that often present a right and wrong way to breastfeed with little room to consider other feeding alternatives such as human milk banks. To be open to a variety of outcomes is one way to resist the belief that the breast is best and emphasize the role of the mother and infant in a primary sense that puts the breast within the context of the mother as opposed to a disembodied and all-mighty breast.

Autumn, a 22-year-old stay at home wife, shares a unique outlook that highlights how normalization of breastfeeding can foster flexibility in thinking beyond the Breast is Best. In her situation, she shares how her decision to breastfeed was not based on a culmination of endless hours of researching the benefits of breastfeeding, as did many of the mothers in this study. She actually stated that she knew little about breastfeeding, had only read one book on the subject, and could not go to her mother for advice since she did not breastfeed her as a child. Even though Autumn's profile showed that she had less formal preparation than the majority of the women in this study, she shared an important attribute during the late postpartum period, which was where she is currently living.

> "I live in Turkey, and they are very pro-breastfeeding here. My pediatrician and OB/GYN and the nurses at the hospital were very helpful. I have never seen a lactation consultant about breastfeeding."

This cultural difference plays a vital role in the normalization of breastfeeding. It may be that in the United States, formal education is the method of choice in educating women on breastfeeding whereas in other countries, an accepting social atmosphere regarding nursing can compensate for a formal way of learning. Living in a culture that is pro-breastfeeding may attribute to her having a similar sentiment as Amy as shown by her narrative.

> "I believe that "breast is best" depends on the person, what is right for some is not right for others."

According to Autumn, what is considered best is subjective and dependent on the actual person's needs and circumstances. Her statement reflects a distinctive viewpoint as many first time mothers tend to fall into the trap of intensive mothering and aim to be the perfect mother under the false assumption that there is only one way to breastfeed. This impossible goal fuels the dichotomy between breast and bottle because if a mother cannot breastfeed, she believes that there is no middle ground and her only alternative is to formula feed. The strive toward perfection often leaves mothers very little room to negotiate her mothering style and method of infant feeding resulting in guilt and a deep sense of failure.

Shortly after giving birth to her son, Connor, she admitted that she was having a difficult time, surprised by feeling worried about her milk supply and making sure her son had enough to eat. There were times when her son used her as a human pacifier and the only way to console him was to nurse him for hours on end. She seemed to have made peace with her new roles as mother and pacifier by her comment,

> "I learned that babies are used to being fed constantly in the womb, and when they go through a growth spurt they can feed constantly. it just helps increase your supply."

Not only was her response sufficient in explaining cluster feedings and growth spurts, she also looked upon it in a positive manner where continuous feeding would work to increase her supply. Rather than associate the large amount of time she spent nursing her son with an insufficient milk supply, she interpreted her son's actions in a normative way and focused on how these constant feedings would result in a positive outcome by increasing her supply. Living in a place where nursing is normalized may foster Autumn's flexibility in thinking which can contribute to her difference in attributions as compared to Maya and Mya whose experiences led them to believe that they had insufficient milk. For mothers such as Maya and Mya, the Breast is

Best was viewed as a generalized "rule" that applied to all mothers and infants with little room for negotiation when individual circumstances fell outside of this cookie-cutter model. When their personal experiences differed from their formal education, the manner in which they were taught may have primed them to blame their own bodies as opposed to seeking alternative reasons that are less judgmental (e.g., their infant going through a growth spurt as opposed to a faulty body that cannot produce enough milk). A flexibility in belief systems where the breast is best but not the only way to feed one's infant seems to buffer some of the stress in breastfeeding for certain women as shown in Autumn's situation.

In searching for answers as to why women who weaned their infants still believed in breastfeeding, we found how effective the current breastfeeding paradigm is in convincing mothers to believe in the Breast is Best even though they were not breastfeeding anymore. We also saw how subscribing to the Breast is Best may result in actions and belief processes that can sabotage breastfeeding outcomes. The experiences of the previous mothers suggest how women can be influenced by the stories on the benefits of breastfeeding cast by policy makers and how those stories can result in a very narrow view of breastfeeding that tends to disable the flexibility in thinking that may help establish a more satisfying nursing relationship between a new mother and her infant. The only way to break free from the problems posed by viewing breastfeeding in a dichotomous manner may be to focus on expanding our current notions of breastfeeding to move beyond health benefits for infants.

Expanding Breastfeeding Benefits

With the obstacles to breastfeeding revealed where women are primed to view breastfeeding in a restrictive way, we asked mothers to share what they learned about themselves during the late postpartum period. Interestingly, we found that the majority of mothers shared

positive changes despite these obstacles. In reading through each reply, notes were written next to responses that expanded the list of familiar infant health benefits. In reviewing each note, codes were created that included breastfeeding as more difficult than initially imagined, a commitment to breastfeeding, learning from doing, breastfeeding is different for everyone, flexibility, resisting intensive mothering, listening to the baby, and body knows. As a result of these codes, three themes emerged that consisted of learning from doing, flexibility as a coping style and the agentic breastfeeding infant.

Learning from doing. An interesting outcome emerged from the women's narratives during the early postpartum period whereby mothers learned important lessons from the act of breastfeeding that they were unable to learn during their prenatal preparations. We labeled this informal education as learning from doing. Madelyn was introduced earlier in this paper and was quite militant with her views on breastfeeding. She gave scathing critiques of the unethical practices of formula companies and put mothers who breastfed on a pedestal. Once she gave birth to her daughter, she noted how her prenatal expectations differed from her actual experience in which her daughter did not want to nurse without the nipple shield resulting in crying and frustration from both parties. Madelyn stated, "I thought I could prepare for the experience. I don't think you can. It's not something you can prepare for" which was in stark contrast to the strong attitudes she held before she became a mother. Madelyn's experience in breastfeeding may have been the catalyst for this change in opinion where practical application taught her more about breastfeeding than the theoretical knowledge she gleaned from the words of others. The knowledge she acquired after her daughter was born may have also helped her be more understanding and less critical of women who are unable to breastfeed. Madelyn was not the only mother who experienced this change in belief system.

Angelina, a 31-year-old, Caucasian woman who chose to breastfeed for health benefits and financial reasons, felt she knew everything about breastfeeding while pregnant by taking prenatal breastfeeding classes, reading literature, finding sources from the Internet, etc. Having shown a strong commitment to breastfeeding during the prenatal period, many of these women felt they were quite prepared to nurse their infants but we find that their preparation in theoretical breastfeeding was incomplete once their infants were born. When Angelina answered the question, what have you learned about breastfeeding during the last few months, she stated,

> "Everything....I thought I knew a lot while pregnant, but there is nothing like actually doing it to teach you what you need to know." (Angelina, mother to Savannah)

Her response highlights one aspect of prenatal breastfeeding information that is often ignored – the fact that some mothers learn by doing. Learning by doing also prompted some mothers to devise their own strategies that were better suited to their unique circumstances. Mackenzie is a 33-year-old African American attorney whom we met earlier. Her status as a well-educated attorney also highlighted socioeconomic differences when it came to supportive measures as compared to her counterparts who had less access to the benefits afforded to the rich and educated. She found that all her research on breastfeeding did not address her specific issue of nursing with large breasts.

> "I wish that there was information out there for how to feed a baby from very large breasts. I feel like I have had to assemble a set of skills from scratch, despite all the research and reading I did before he was born." (Mackenzie, mother to Austin)

She noted that she had to invent her own techniques in order to be able to nurse her son. Her reaction shows a proactive approach in dealing with a situation where she had no prior experience and was not able to find information based on her prenatal sources. Other mothers such as Mariah found themselves in a similar situation. Mariah, a 27-year-old Caucasian woman

who was on complete bed rest since during her pregnancy, grew up in a family where everyone nursed their baby. When she found out her baby had reflux, she had to devise her own nursing positions to accommodate her daughter's condition. She notes how she took the initiative in using her current knowledge of standard nursing positions to reinvent new positions to nurse her daughter where she was in a sitting position so as to not aggravate her reflux.

> "There are more than the cradle and football hold. My baby has reflux so I have to nurse her while she is sitting up and that means altering the standard positions." (Mariah, 27-year-old mother to Lillian)

Mackenzie and Mariah shared specific examples where they devised solutions to problems that were rare and not addressed under the current breastfeeding protocols. In both these examples, solutions to problems were found not through reading about them in published literature or hearing someone else's words but through breastfeeding their own infants. There was no way for them to know what was to transpire prior to giving birth and engaging in breastfeeding. The only way they could have figured out and developed ways to nurse their infants was through learning from doing. Their responses suggest that current prenatal breastfeeding education often leaves gaps in knowledge and following a standard protocol can hinder the proactive problem solving needed for successful breastfeeding. If many mothers noted that they learned from doing, what does the future hold for current methods of breastfeeding education? The findings of this study are not meant to eradicate the current method of breastfeeding education in its entirety but to open for discussion a multitude of ways to improve what we already know. There may be some women who are able to learn by the current methods but we need to acknowledge that others may not be able to learn in this manner. Without acknowledging that some mothers learn from doing, women may find it difficult to think outside of the box and create their own solutions, which may increase weaning.

Other mothers shared a similar sentiment where they gained valuable experience on their own. Amelia is a 30-year-old Caucasian financial services compliance officer and mother to Juan. She experienced some difficulties getting her son to latch on correctly and had endured painful cracks on her nipples. She only trusted the help from lactation consultants because she believed pediatricians and maternity nurses were prone to supplement with formula. In describing what she learned from her initial encounters with breastfeeding, Amelia sums it up very simply.

> "that everybody's experience is different and there's only so much you can learn from books and from other mothers' experiences."

Amelia's narrative focuses on the fact that there are limits to preparing for breastfeeding that is based on other people's experiences and written words. She hints at the fact that a big part of learning how to breastfeed is dependant on putting your infant to your breast. There is only so much one can learn from the words of others.

The importance of learning by doing is often dismissed in traditional methods of breastfeeding education as shown by Melissa's narrative and may be evidence of a rigidity that compromises the flexibility needed in breastfeeding. Melissa is a 28-year-old, married, Caucasian woman who completed her bachelor's degree and works as in data entry with a software company. Before she gave birth, she felt quite prepared for breastfeeding as evidenced by her narrative below.

> "I feel that I know quite a bit for a first time mom...I have taken a breastfeeding class at my local hospital and have also read a book on breastfeeding. And of course talking with friends who have breastfed their children. The most important thing that I believe I've learned is that every woman is capable of breastfeeding. That at first it may be difficult (trouble latching on, milk coming in, sore nipples, etc.) but that these difficulties can be worked through and that I can be successful at breastfeeding my child."

Her words suggest that completing a breastfeeding class and reading a book on breastfeeding was adequate preparation for breastfeeding her son, Luis once he was born. Her prenatal confidence was shared among the women in this sample where the majority believed that taking a breastfeeding class, reading up on the topic, talking to other mothers who breastfed, having access to lactation consultants were adequate tools they needed to successfully breastfeed. Under the current paradigm, these are the only legitimate methods to prepare women to breastfeed and a commonality in these methods is their reliance on external sources of information. When we revisited her during the late postpartum period, she discovered a new insight regarding preparation.

> "As far as my knowledge about breastfeeding goes, I don't think I know that much more now than I did when I was pregnant. But as for the mechanics of things go and the actual process of breastfeeding, that is where I have learned more. Now I know how to get my baby latched on. I know how long I should feed him for (which will be different for every baby of course)."

The experience of breastfeeding her son gave her much more information regarding the logistics of breastfeed than all her prenatal preparation. It was through breastfeeding that she was able to better understand the mechanics of positioning and how the actual process panned out. For Melissa, these were aspects of learning that could have only happened with her son and not through the words of others. Lillian, a 32-year-old, Caucasian corporate recruiter who was breastfed as an infant, shares a similar sentiment. She stated,

> "So much of it is hands on. I have learned how to hold her best to ensure a good latch, how to make her and I both comfortable, ways to make her less gassy, how to pump and store milk."

Her experience touches upon nuances in breastfeeding that are often glossed over, such as how best to hold one's infant where both mom and baby are comfortable. Too much emphasis seems to be placed on perfecting the infant's latch when the mom may be uncomfortable or in pain. If

the mother is uncomfortable, whether it is from the pain of childbirth or contorting herself to try to get her infant latched on, she is unable to relax and this state can affect her let down reflex. These findings suggest a power distinction where experts tend to offer advice based on what they consider to be critical without taking into account the needs of those under their care. These power differences can also affect how first time mothers view their own competencies as shown by Kennedy's experiences as a young mother. Kennedy is a Caucasian 24-year-old graduate student and teaching assistant who believes in the health benefits of breastfeeding and is considered quite knowledgeable about additional benefits as expressed by her narrative below:

> "Breastmilk is the healthiest choice for babies nutritionally; it can help mothers recover more quickly, lose weight faster, create a healthy attachment with baby; almost every woman is capable of breastfeeding and producing enough milk for her baby"

She has experience caring for other infants remarking on the quiet bonding during feeding times and happily anticipates bonding with her daughter, Jenna through breastfeeding. She also hints at how the opinions of others with regards to her young age were not always positive.

> "Breastfeeding makes me feel more confident as a mother - I am somewhat "young" according to my peers; as a graduate student, it is not necessarily encouraged to get pregnant at this point in my life. I feel like most people see me as a student or a "kid" and the fact that I am capable not only of creating this little person but also sustaining her life in a mature, maternal way that nobody else can provide for her is very satisfying."

According to Kennedy's narrative, breastfeeding offers her a unique opportunity to respond to the opinions of others by providing something for her daughter that no one else can. To Kennedy, that is a clear sign of showing her peers that she is a responsible and mature mother that has nothing to do with her age. In this manner, breastfeeding her daughter became a supportive measure to not only provide nutrition but also as a way to garner support for herself as a young mother. Her narrative suggests that support does not have to be provided by other

individuals but can also grow from within. In a study which examined both sides of breastfeeding support between midwives and mothers, Bäckström, Hertfelt Wahn, and Ekström (2010) found that in order for women to feel supported, they needed assistance that was not heavy-handed but passive where mothers felt control of the situation and were active players in the resolution of the problem. To identify the needs of the mother, relinquish power to her, and actively engage her in the solution may result in a more effective transfer of support that lessens the power distinction. It may be that much of the external support from outside individuals such as medical professionals, comes across as heavy-handed because they are unaware of the personal needs of the nursing mother. When mothers find ways to support themselves from within and develop their own supportive measures, they become active players in the resolution of their problems and this active role and personal perspective of learning from doing may result in more effective ways for mothers to nurse their infants. Therefore, the question becomes whether policy makers, lactation consultants, and medical professionals can relinquish their need to control and work with those under their care on an equal basis. If asking that those in power become more egalitarian to those whom they are purported to help is too tall of an order, an alternative and possibly more effective strategy may be to foster ways mothers can break free from relying on outside experts and focus on the two key players in breastfeeding, that of mother and baby. Learning from doing can help mothers break free from the restrictiveness inherent in current breastfeeding models by taking a proactive approach in coping and resolving issues. As mothers expanded their repertoire in breastfeeding knowledge by actually nursing their newborns and learning by doing, they seemed more open to viewing their infant as a key player in their breastfeeding experiences. By turning to their infants for cues on how and when to breastfeed, they shifted the focal point of breastfeeding from a top down model with breastfeeding experts

and medical professionals dictating how mothers should nurse to an egalitarian model between mother and infant.

The agentic breastfeeding infant. The agency of the infant was measured to assess their effect on their mother's breastfeeding experience. Recall that infant agency was operationally defined as the capacity, condition, or state of acting or of exerting power by the infant as perceived by the mother (e.g., physical reactions, such as exhibiting joy or distress, towards either breast- or bottle-feeding, refusing bottles, making gestures toward the breast, etc.). Throughout each data wave women were asked their opinions of whether infants preferred to breastfeed or formula feed. Figure 11. depicts a consistent trend of maternal perceptions of infants preferring to breastfeed across each time period. Results indicated significant differences of maternal perceptions of infant preference across all three data waves of prenatal, early and late postpartum, $F(2, 148) = 6.07$, $p < .01$). Mauchly's test indicated that the assumption of sphericity was violated, $\chi^2 (2) = 12.39$, $p < .001$) and therefore, degrees of freedom were corrected using the Huynh-Feldt estimates of sphericity ($\varepsilon = .88$). Pairwise comparisons indicated significant differences between maternal perceptions of infant's preferences in feeding methods between the prenatal and late postpartum periods, $p < .01$. We further explore these differences by having mothers share their initial attempts at breastfeeding.

First attempts at breastfeeding. Many mothers noted how their infants knew more than they did when it came to breastfeeding and described how they let their infant take the lead in latching on. Some described situations where their infants knew exactly what to do when it came to initiating nursing. When newborn infants are placed on their mother's body to encourage skin-to-skin contact, they have been found to instinctually make their way toward the mother's nipple and latch on by themselves (Righard & Alade, 1990; Widstrom, Wahlberg,

Matthiesen, Eneroth, Uvnas-Moberg & Werner, 1990). Mothers are also positively affected by skin-to-skin contact with their newborns whereby the increase in maternal levels of oxytocin have been shown to facilitate the let-down reflex and increase bonding between mother and infant (Palmer, 2009). Some hospitals incorporate this skin-to-skin contact in all types of births even cesarean sections where newborns are placed on their mother's chest while obstetricians surgically close the incision. Sara is a 31-year-old married Caucasian woman who works as a teacher and shows distress from not being able to hold her son after he is born. She knew breastfeeding may be difficult at the beginning but chose to breastfeed based on the health benefits for her son, Evan Isaac Mason. She had gathered much of her breastfeeding knowledge from formal classes and literature on breastfeeding. Sara describes their first experience with breastfeeding below.

> "Because of repair for a vaginal tear, I didn't get to hold the baby until almost an hour had gone by. At that time I attempted to nurse, with the nurse's help. The sensation of him nursing felt very strange. I was unsure whether he had actually "latched" on but he seemed to know what to do."

Based on our knowledge on the importance of skin-to-skin contact, any period of separation between mother and newborn can be a cause for alarm but Sara finds that her son seems to know exactly what to do even though she was unsure. In describing how Evan shows his enjoyment during nursing, Sara noted that he knew when to stop to cough or burp and once that has been taken care of, he would resume nursing.

> "He latches on fairly quickly and takes long swallows. He nurses for about 30-45 minutes at a feeding. He usually stops once during a feed, either to cough or to burp, then goes right back to nursing."

Sara's descriptions of Evan's nursing behavior suggest that he is a baby who knows how to latch on properly. His long swallows are one of the indicators that he is able to suckle his mother's

breast in an effective manner. Evan's ability to nurse easily can help alleviate some of the worries present in first time motherhood as evidenced by the following narrative.

> "I have learned that I am good at this! It is a very satisfying feeling to be able to provide your baby with the food he needs. I was truly unsure of myself in the beginning and I'm very glad I stuck with it. I will continue nursing as long as I can."

Although she mentions that she felt unsure of herself during the early postpartum period, her persistence and Evan's ability to nurse may have played a role in her newfound confidence. Her narrative suggests that the actions of the infant can influence how some mothers experienced breastfeeding. Abigail, a 31-year-old Caucasian paralegal, shared a similar sentiment where her son, Christopher took the lead in breastfeeding when she was not sure what to do.

> "A little awkward - first time trying and all. But, it went well. Baby knew more about what to do than I did."

Abigail's statement suggests how an initial awkwardness can result in a positive outcome when you allow the baby to use his or her natural instincts. She continues to describe how Christopher is able to let her know that he wants to nurse with the following comment.

> "He reminds me - sometimes every hour - that he'd be much happier nursing than almost anything else."

Her comment suggest that her son takes an active role in showing her when he is hungry and how much satisfaction he gains from nursing where he prefers nursing to all other activities. In both these scenarios, Sara and Abigail noted how capable their infants were in initiating breastfeeding and how they played an active role which alleviated some of their own insecurity in how to proceed. If the degree of agency or contribution of the newborn in breastfeeding were taken into account, there may be less pressure for new mothers to try to master breastfeeding all on their own. We met Alexis who is a 30-year-old woman of American Indian and African American descent earlier and she attributed her health as a child to having been breastfed. She

states, “the baby will instinctively help you learn how to satisfy their needs, if you really pay attention.” To allow and acknowledge the role of the newborn can be beneficial to mothers in a myriad of ways. Women may be better equipped in seeing past the strict definitions and dichotomy of breastfeeding perpetrated by breastfeeding-related literature and physicians with the realization that infants are unique and active players in breastfeeding. Acknowledging infant agency may also encourage women to hear the subtle cues their infants are sending which can result in childrearing to be less stressful and more enjoyable. As a result, mothers may be encouraged to look toward their infants for cues or within themselves when unfamiliar situations arise instead of relying on outside experts.

These comments suggest that some infants are more knowledgeable about breastfeeding than their mothers. When mothers were unsure or anxious about breastfeeding, letting their infants take the lead resulted in a positive outcome. As we asked mothers to describe specific behaviors their infants exhibited to show their preferences, evidence grew regarding the active role the infants play in how they wish to be fed.

How babies show their preference. Even though over 90% of the women while pregnant believed that newborns preferred to be breastfed, it was interesting to read their responses describing how their infants indicated their preference in feeding during the early postpartum period. We found newborns that refused to feed from a bottle, anticipated breastfeeding, and exhibited signs of pleasure when they were nursing.

Grace and Megan interpreted their infant’s behaviors as knowing the difference between breastfeeding and bottle-feeding with nursing being the preferred method of feeding.

> “when feeding with a bottle he trys to pull away and turns towards my breast. also when im holding him he loves to rub up against my chest and smack his lips.” (Grace, 19-year-old, stay at home wife describing Alexander)

> "When I started pumping I would give her a bottle and once it was in her mouth, she would shake her head "no" and turn her head sideways towards my breast." (Megan, 21-year-old stay at home wife describing Sarah Sophia Alyssa)

Here we see deliberate actions where the infant actively refused the bottle while indicating a desire to nurse by moving towards the breast. Vanessa and Lillian interpret the actions of their infants as being able to express a physical and mental awareness that nursing is associated with their mother's bodies and a pleasurable activity.

> "She gets excited looks on her face and waves her arms everywhere. She also knows exactly where to go for the milk and nuzzles up to the nipple when she is hungry." (Vanessa, 28-year-old homemaker describing Katherine)

> "roots when she is hungry, seems to recognize the sound of my nursing bra unhooking" (Lillian, 32-year-old corporate recruiter describing Natalie Kayla Jessica)

Not only do these infants show deliberate actions to nurse but they also seem to express an eager anticipation towards breastfeeding that suggest newborns can associate pleasurable activities at a very early age. Last, we have Nicole and Jordan's descriptions of contentment and pleasure from their infants.

> "She is more content when nursing. Eyes roll back like she is saying/thinking "oh yeah"" (Nicole, 26-year-old stay at home mother describing Bentley Melia)

> "He roots very well and when he's done eating he smacks his lips! He also seems very content to be breastfeeding- so relaxed and satisfied." (Jordan, 23-year-old stay at home mother describing Luke)

In their descriptions, breastfeeding was more than a simple method of feeding or nutrition and moved beyond physical satisfaction to become a source of emotional pleasure for their infants and personal achievement for the mothers who find breastfeeding difficult and painful. All these response are evidence that the baby, although just a newborn, is able to provide gestures that can be construed as being an active agent in the breastfeeding relationship. These infants respond to their mothers by smacking their lips, rolling their eyes, nuzzling up to their mother's nipple or

chest, and even actively refusing any other form of nourishment. Even on the off chance that these actions are not actual signs of love, the interpretation of love by the mother can encourage perseverance when breastfeeding becomes difficult (e.g., when her child is sick, nursing through growth spurts, etc.). In many ways, the reactions of mothers interpreting their infant's reactions to nursing expands our current notions of breastfeeding as a purely physical act of nutrition. These simple gestures from their infant can provide large incentives to continue breastfeeding that may not be found through spouses/partners, medical professionals, lactation professionals, or breastfeeding literature. These findings suggest a relationship between maternal satisfaction and infant agency that can positive affect breastfeeding outcome. Regression analysis found the subscale, infant satisfaction/growth from the Maternal Breastfeeding Evaluation Scale (MBFES) to be a significant predictor of actual infant feeding method for both the early and late postpartum periods, $t(107) = -5.80$, $p < .001$, $t(61) = -3.52$, $p < .001$, respectively. These results indicate that the more satisfied mothers were with regards to their infant's pleasure and growth from nursing, the less likely they were to formula feed their infants. The early postpartum model accounted for 42.8% of the variance in actual infant feeding method by infant satisfaction and growth as compared to the late postpartum model that accounted for 35.2% of the variance. Such differences in models may suggest that infant satisfaction from nursing and adequate growth rate may be stronger predictors of actual infant feeding outcome during the early postpartum period but once growth rates are less of a concern during the late postpartum period, other factors may influence actual infant feeding outcome. Based on the reactions from this sample of mothers, the role of the infant can help alleviate pressure to breastfeed in the "correct" way by initiating early skin-to-skin contact, fostering confidence in women by listening to the

subtle cues from their infants, and reaping the emotional benefits of breastfeeding that are often disregarded in breastfeeding literature and educational materials.

Just as each of the previous actions displayed by the infant indicated a preference to nurse, there were also infants who indicated displeasure at nursing which may help explain significant differences between prenatal and late postpartum perceptions with less infants being nursed during the late postpartum period. The experiences of Sophia, Emma, and Andrea suggest how the actions of their infant can determine the course of their breastfeeding relationship.

> "She no longer latches on. Whenever I try to nurse her, she just cries and refuses to even try. The only time I can get her to latch is in the middle of the night, and then she only nurses for a minute or two before popping off." (Sophia, 28-year-old editor describing daughter, Megan)

According to Sophia, her daughter is able to halt their breastfeeding relationship by not latching on. Her efforts to nurse are thwarted by the actions of her baby, leaving her no other choice than to wean.

> "We stopped breastfeeding at about 1 month and 1 week because of my impatience and frustration, and my son was also not cooperative despite my best efforts." (Emma, 24-year-old military service woman describing Matthew Daniel)

Emma notes a similar reaction from her son, noting that he was not very cooperative. In both Sophia and Emma's situations, it is the actions of their infants that result in weaning as both mothers have exerted much effort to breastfeeding their infants.

> "I joined the ranks of "exclusively pumping" about 5 weeks ago. Basically, he got to the point where he'd only latch for a few minutes and then he'd unlatch and scream. I assumed he was frustrated. I don't even bother having him latch anymore." (Andrea, 27-year-old service representative describing her son, Caleb)

Andrea interprets her son's response to nursing as due to frustration and as a result of his screaming, she does not bother to nurse him anymore. As a way to continue breastfeeding, she

resorts to exclusively pumping as a way to continue feeding her son breast milk. The above narratives show infants who stopped latching, refused the breast, or screamed and cried at the breast. With such strong responses, there seems to be strong evidence regarding the role of the infant in the breastfeeding relationship, which supports the argument that current ways of teaching breastfeeding may be incomplete if they focus only on the mother. For Sophia, Emma, and Andrea, the actions of their infants offered them no other choice than to formula feed or feed expressed milk in a bottle. Palmer (2009) finds that the role of the infant is underestimated in all aspects of breastfeeding and that full-term infants are quite capable of regulating their meals and their mother's milk supply. To incorporate the role of the infant in a breastfeeding relationship may result in less reliance on feeding restrictions that continue to apply in this day and age. If medical professionals were to view the infant as playing an active and vital role in breastfeeding, they may be less likely to find ways to control the timing of how often mothers need to nurse as cues from the infant would suffice. The experiences of these women suggest that their interpretations of their infant's feeding behaviors played an important role in their breastfeeding outcome. To acknowledge this interdependent relationship may be influential in challenging the present power structure inherent in how women learn how to breastfeed.

Maternal Transformations

As prenatal expectations shaped the way women experienced breastfeeding and current portrayals of breastfeeding created obstacles for new mothers, we observed how each challenge gave way to opportunities for maternal transformations. Specifically, the experience of breastfeeding tapped into psychological strengths many women did not realize they possessed prior to becoming a mother. We continue to explore ways that challenge the dominant discourse in breastfeeding by identifying differences in how women learn. If the current breastfeeding

paradigm emphasizes a general model of learning, the best way to challenge this model is to identify differences in learning behaviors that are specific to women. In doing so, we may be better equipped to create a new model of breastfeeding that is more suitable to women.

Ways of Knowing. Based on the work by Belenky, Clinchy, Goldberger, and Tarule (1986), female learning styles center on 5 different stages consisting of silence, received, subjective, procedural and constructed knowledge. We sought to identify whether women exhibited the ways of knowing suggested by Belenky et al. (1986) and examined whether breastfeeding could be a catalyst towards internal change in how women sought the truth. Evidence based on the ways of knowing categories proposed by Belenky et al. (1986) can be used in crafting a new approach in breastfeeding education that does not silence women but empowers them. Having tracked ways of knowing across each of the three data waves, significant differences were found for the silence and subjective ways of knowing. Means and standard deviations for each of the 5 Ways of Knowing Inventories are shown in Tables 7 to 11. Recall that women in the silence stage tend to listen to authorities with unquestioned obedience and not their own inner voice. As a result, these women are unable to hear their inner voice and tend to make decisions based on the thoughts and feelings of others. As time progressed, the mothers, as a whole, showed significant differences in their silence dimension, $F(2, 142) = 3.21$, $p < .05$. Post hoc test revealed significant mean differences between the prenatal and late postpartum periods suggesting that as time passed, a woman's silence dimension decreased making her less likely to feel as though she had no voice in matters concerning breastfeeding her infant ($p < .05$).

In addition to these changes, women's subjective ways of knowing also showed significant change from the prenatal to late postpartum periods. Women who are in the

subjective stage no longer adhere to dichotomies and begin to believe that truth and knowledge can come from within by listening to their inner voice. This shift is significant because as women begin to listen from within, they tap into an inner source of strength by valuing their intuitive powers and embark on the realization that they can become their own authorities. Results indicated that levels of subjective knowledge increased as time passed, $F(2, 142) = 4.98$, $p < .01$. Pairwise comparisons showed significant differences between the prenatal and late postpartum periods ($p < .05$), and the early and late postpartum periods ($p < .01$) suggesting that the women were laying the foundation toward inward listening as opposed to relying solely on outside authorities in learning. We begin with the lives of Kennedy and Melissa as a way to highlight how silence and invisibility can be transformed into a strong and powerful inner voice.

Changes in silence ways of knowing. As women became less silent and more flexible in their thinking, these changes were reflected in their words. An example of these changes is Kennedy, who was introduced earlier as a 24-year-old, married graduate student and teaching assistant. She gave us insight in the importance of learning by doing and continues her maternal transformation by finding her voice. Here are Kennedy's own words in describing her first attempt to breastfeed after giving birth to her daughter, Jenna.

> "About 10-15 minutes after she was born, she had been laying on my bare chest skin-to-skin and started to fuss a little so I asked the nurse if she thought I should feed her. I'm not sure why I asked - I had planned on feeding her right away and knew it was the right thing to do. I sort of awkwardly got her to latch on to the left side (not properly, as I later discovered from the nasty blister that developed) and she ended up eating for about 10 minutes on that side, and about 5-10 more on the other side. It felt good to be 'successful' right away - she latched on, ate, and burped with no problem - but it wasn't as fulfilling as maybe I'd dreamed of. I had a definite feeling of bonding and overwhelming love, but at some point during the experience my in-laws started hovering outside my door curtain, chatting and shuffling around and asking when it was ok to come in. I finally gave in and invited my mother-in-law in, since I'd pretty much kicked her out of the delivery I felt obligated. So part of the feeding I felt very anxious and overwhelmed, and a little irritated. My MIL (mother-in-law) was hovering over

> me and touching the baby and crying, telling me she was so smart and what a good mom I was. I love my husband's mom, but I just wish she had really understood what I meant when I said we wanted a private delivery experience."

Her first experience in breastfeeding begins with feeling she must ask for permission to nurse her daughter and accommodate her mother-in-law whom she felt guilty for not allowing to witness the birth. To ask for permission to nurse can be construed as a sign of the power medical staff have over their patients. In many instances, the medical staff often overrules the wishes of mothers under the disguise of protecting the newborn. This protection often creates a sense of mistrust and perpetuates a risk reduction mentality that does little to encourage confidence in mothering. Her description of feeling successful with breastfeeding highlights the dichotomous nature of the current breastfeeding paradigm but her success was fleeting as she later developed a blister on her nipple from a bad latch. Kennedy's accommodation of others is a common trap many new mothers fall into where her decision for privacy while giving birth led to feelings of guilt for kicking her mother-in-law out of the delivery room which subsequently led her to rush though her first attempt at breastfeeding. Her description of giving into others resulted in feelings of anxiety over trying to get her daughter to latch on, being overwhelmed as a new mother, and irritated that she felt the need to accommodate others when she felt this should have been a private moment between mother and child. Her last sentence hints at a realization of acknowledging her own needs with the mention of spending some private moments with her new family. The current paradigm may also portray breastfeeding as an idyllic situation where all is rosy and bonding is automatic but as Kennedy notes, her initial breastfeeding experience was not as fulfilling as originally expected which may have been partly due to the combination of giving birth in a hospital setting and trying to accommodate the needs of others before her own.

When asked to describe an incident where she was unsure of what to do, she shares the

following narrative.

> "When my milk came in and I was engorged, I had read conflicting advice about whether I needed to get up in the night to pump if she slept through a feeding. I desperately wanted to sleep but I was terrified of depleting my milk supply by not getting up to feed or waking her up to eat. Ultimately I decided that there was no need to wake a sleeping baby during the night, and that my mom didn't have a pump and I didn't starve."

The issue of whether a mother should feed a sleeping infant is a common cause for confusion, as some professionals believe that all newborns need to be awakened for their feedings while others believe they need not be disturbed. Related to this issue of sleep is the mother's milk supply where some professionals believe that a mother should not miss a feeding as that may decrease her production, yet at the same time, the lack of sleep can also result in the same outcome. When asked what she did to remedy the above situation, she notes that she needed the sleep and her milk supply was fine. She states:

> "I learned to trust my instincts, or at least use sound logic and rational thinking instead of strictly adhering to the latest 'best advice'."

Kennedy shows a clear example of a path toward maternal transformation. She began her journey into motherhood by feeling silenced with a lack of entitlement to her own daughter while accommodating others but begins to acknowledge her own needs. When she came across a situation where she faced conflicting advice regarding her milk supply, she took a chance by looking within and trusting her own instincts. She moved past the "best advice" of outside experts and began to examine how her own situation and past experiences (her mom not having a pump) were just as valid in finding the answer to her problem. This pattern of behavior was found in many of the responses during the late postpartum period.

Although eighty-nine percent of the women responded that they would not consider themselves to be experts in breastfeeding, they made a clear distinction between an overall

expert and being an expert to their particular child. Kennedy's response echoes that sentiment with her response below.

> "I'm MY breastfeeding expert, I know what works for me. I can feel comfortable giving advice about what works for me to other moms. I guarantee I've done more research on normal, healthy breastfeeding and remedies to common breastfeeding issues in the past 4 months than my pediatrician has done in her life."

Her response separates herself from the medical professionals whom she feels are less capable of helping women with breastfeeding and states that "Doctors should stick to disorders and diseases and leave things alone that aren't broken." Her move away from medical professionals highlights her new acceptance of the validity of her own experiences and listening to her own inner voice. She is clear in how her decisions worked best in her situation and how her choices may not work for others but she can share what she went through as a way for other women to learn from her experience. These statements acknowledge the unique nature of each woman's understanding of breastfeeding and suggest a move away from the generalized model of breastfeeding that is offered from medical professionals. According to the current breastfeeding guidelines, this mother can be considered a success at breastfeeding as her daughter was exclusively breastfeed with some expressed breast milk from the early postpartum to the late postpartum periods but Kennedy's journey has shown that she has gained much more than a narrowly defined version of breastfeeding success.

Another mother also exemplified these changes. We met Melissa earlier with her experiences from learning by doing. She is a 28-year-old, married, Caucasian woman who completed her bachelor's degree and works as in data entry with a software company. We revisit her as she tries to get her son, Luis latched on.

> "I couldn't get him to latch on and I remember being all stressed out because my in-laws were wanting to come in to see him so I was trying to get him on in a

> rush. After several minutes I just said forget it, we'll work on this later so that my in-laws could come in."

We see again how accommodating in-laws can result in new mothers rushing through their first experience trying to get their newborn to latch on which sets the stage for further anxiety and stress. Her experience follows a similar change in her degree of silence where pressure from accommodating the needs of others takes precedence over her own needs. One can sense her frustration when attempts to get her baby latched on deviate from the standard instructions that are presumed to work with all infants. When asked if her prenatal expectations affected her postpartum experience, she stated:

> "I didn't really have any expectations. I had heard so many stories of breastfeeding, from the best to the worst scenarios and everything in between. I knew that my experience would be different from what I had heard and could land anywhere on the scale, so I tried to have any real expectations."

Here is a new mother who knows that despite all she has learned about breastfeeding, her experiences may still be different. Her view of uniqueness follows her throughout her early and late postpartum periods as she shares what she has learned about breastfeeding with the following statement. We were first introduced to her narrative regarding learning from doing but there are more details to support her maternal transformation.

> "As far as my knowledge about breastfeeding goes, I don't think I know that much more now than I did when I was pregnant. But as for the mechanics of things go and the actual process of breastfeeding, that is where I have learned more. Now I know how to get my baby latched on. I know how long I should feed him for (which will be different for every baby of course)."

As we saw how her response touched upon the findings regarding theoretical versus practical breastfeeding, we also learn that the practical side of breastfeeding was key in being able to exclusively breastfeed him from the early to late postpartum periods. Her transformation from one who felt that outside authorities were the only valid sources of information is evident with

her acknowledgement that each infant is different in terms of how they breastfeed.

When compared to Kennedy, Melissa does not consider herself to be a breastfeeding expert but she shares a similar sense of being an expert to her own infant as opposed to an expert on all infants.

> "I would consider myself a breastfeeding expert when it comes to MY baby. But that is as far as my expertise goes. Every baby is different with their own set of problems and needs. I can only know how to meet the needs of my own child."

Her words hint at the need for individualized attention and support as opposed to a general model of breastfeeding help. The definitions of expert expressed by Kennedy and Melissa are quite different from the general definition of expert. Both mothers find that they are experts only to their own infants and that their expertise may not apply to other infants. This slight refinement in the definition of expert may result in the reconceptualization of expertise because to become a breastfeeding expert in the current sense (a.k.a., breastfeeding paradigm) one needs to have multiple experiences with multiple infants but to be a breastfeeding expert to your own child, a mother only needs to have multiple experiences with her infant. To acknowledge this change in redefining expertise would highlight that mothers really do know their infants better than medical professionals who have been known to downplay maternal instincts when mothers knew something was wrong with their child that had yet to be diagnosed by a physician.

The responses of these two mothers suggest how an initial silencing of their own needs for the sake of others has the potential to develop into a greater awareness of their inner voice coupled with an acknowledgement and validation of their unique experiences and circumstances. These women move from accepting the truth that emanates from outside authorities to an internal belief and acceptance of what they know to be best for their infants.

Changes in subjective ways of knowing. As the postpartum period progressed, more

women began to realize that their experiences were valid and of value. As women began their quest for knowledge relying on outside sources (e.g., books, doctors, nurses, lactation consultants, etc.), they later sought the truth from within the mother-infant dyad. Evelyn is a 27-year-old, stay at home mother who chose to breastfeed for the nutritional benefits for her baby and financial reasons for herself. She believed that breastfeeding would be successful but prepared herself for difficulties in the beginning. As she gained confidence in breastfeeding during the late postpartum period, she began to realize that breastfeeding is a unique process that differed for everybody.

> "I've learned that it's different for everybody. I listened to lots of advice that does not apply to me and my baby." (Evelyn, mother to daughter, Allison Haley Maria)

This discovery led her to be more critical of the information she received from outside sources and suggested a move towards believing that the truth can come from within. This trend was quite robust as we witnessed multiple mothers sharing a similar sentiment. Molly is a 30-year-old Pilates instructor who considered herself to be neutral when it came to breastfeeding but as she began thinking about starting a family, she researched the benefits of breastfeeding and now considers herself to be pro-breastfeeding. Molly was exhausted during the first few days postpartum as her daughter was nursing around the clock but she realized that her unending nursing was the best way to get her milk to come in. Her daughter's nursing schedule may have prompted Molly to see how the use of schedules is arbitrary.

> "That there is no such thing as a schedule. In the beginning I was trying to follow "rules" it works better when you just relax." (Molly, mother to Faith Kimberly Madeline)

Molly's narrative also hints at the stress of trying to follow the rules, which can negatively affect a mother's milk supply. She also noted how her confidence was strong as a new mother and she attributed this to the reactions of her daughter. She stated:

> "That I am a confident mother. I know what is best for my baby and I am assured by her responding to my care."

Molly's narrative is a good exemplar of our theories on infant agency as her response provides support for the interdependence between maternal care giving and infant response. As mothers exhibited more subjective ways of knowing, we noticed a consistent pattern where these women tended to view their infant as an active participant in their breastfeeding relationship. Jennifer is a 34-year-old stay at home mother who grew up in a breastfeeding household where she and her siblings were all breastfed. She chose to breastfeed her baby based on the long list of benefits for both infant and mother. Once her daughter, Grace was born, she did experience sore nipples but she knew the importance of following her baby's schedule and trusting her own instincts. Her narrative exemplifies embracing a subjective way of knowing.

> "I've learned my babies preferences. when she likes to eat, how and how much, when she's full, etc. I've also learned that there is a lot more to breastfeeding than I first thought! It can be a lot more difficult and painful than anyone tells you and at times frustrating." (Jennifer, mother to Grace)

We first met Vanessa when we discussed power hierarchies. She gave birth to a daughter named Katherine and had chosen to breastfeed based on health benefits and financial reasons. Vanessa's experience shows how her subjective knowledge was growing.

> "Even though the doctors, nurses, consultants & books tell you to feed every so many hours for this amount of time and to count diapers etc, your baby will let you know when its hungry. If you just keep a good idea of the amount of diapers that is ok too. It doesn't have to be so scientific." (Vanessa, stay at home mom to Katherine)

Vanessa's last sentence brings to light the possibility of a viable alternative to learning about breastfeeding that does not revolve around the words of others. Michelle's response furthers Vanessa's revelation. Amber is a 32-year-old human resource employee who believed in the benefits of breastfeeding and gathered much of her prenatal information from her sister who was

nursing at the time. When asked to describe her feelings toward breastfeeding experts during the late postpartum period, she states:

> "They can give good advice, but as a mom you need to learn on your own and learn from your baby what they need. Experts did help into the initial phase and Stephanie and I have mastered it from there." (Amber, mother to Stephanie)

Amber's response looks to the significance of mothers needing to learn from doing and the cues from their own baby. For her, the role of experts was to offer generalized information but the true learning stemmed from interactions between mother and infant.

Evelyn, Molly, Jennifer, Vanessa, and Amber all focus on the knowledge of their infants and indicate a move from expert advice to cues from their infants. Rather than forging a bond with objective research as indicated by Vanessa who stated, "it doesn't have to be so scientific," these women are fostering their intuitive nature by learning to read their infants and acknowledging their role in breastfeeding. The move from breastfeeding as a scientific-based activity to informal cues from infants has the potential to buffer the current risk-reduction ideology that has developed in line with intensive mothering strategies. To breastfeed in a manner that focuses on reading the cues put forth by one's own infant, mothers can foster a relationship with their infant that is not based on fear (e.g., breastfeeding to prevent disease, lower IQ, etc.) but infant-centered. In this sense, each mother reaps the benefits of breastfeeding that is based on her specific needs and her infant reaps the benefits of having a mother who is more in tuned to his or her needs.

In terms of breastfeeding, subjective knowers no longer viewed policy makers as the only authorities on breastfeeding because they began to realize that their breastfeeding experience could differ from other women, their relationship with their baby was unique, and what works for some women may not work for others. Although both groups of women (e.g., silence and

subjective knowers) experienced similar changes, the subjective women took those changes one step further as shown by the following comments by Trinity, Addison, and Stephanie.

> "MOMS KNOW BEST" (Trinity, 23-year-old mother to Cameron)

Trinity acknowledges that the distinctions that were made earlier regarding the differing degrees of expertise where the amount of time mothers spend with their infants can readily make them an expert to their own child.

> "please don't preach about breastfeeding if you have never done it." (Addison, 26-year-old police officer and mother to Chloe)

Addisons's comment is along the same lines and indicates a critical view of breastfeeding where she recognizes the possibility that breastfeeding experts may not have any practical experience breastfeeding, which highlights the value of learning by doing.

> "That they aren't experts unless they themselves have actually breast fed." (Stephanie, 26-year-old graphic artist and mom to Elijah)

The narrative by Stephanie echoes the same sentiment as Addison where practical breastfeeding holds a higher value than theoretical breastfeeding. Stephanie's comment also supports the move from the blind acceptance of a theoretical model of breastfeeding to valuing the importance of learning by doing where individual experiences in breastfeeding are just as valuable, if not more so. Each of their responses shares not only a greater appreciation of lived experience but also a move away from authority figures that are viewed as unreliable in dispensing accurate breastfeeding information. This is a significant change in a woman's mindset as we recall how the majority of women relied on outside authorities such as physicians, lactation consultants and other breastfeeding experts for the "rules" on how to successfully breastfeed. For many women, that reliance on theoretical teachings and surveillance from those in power led to poor breastfeeding outcomes where anxiety and stress from trying to abide by those rules resulted in

many women weaning their newborns sooner than they had hoped.

As confidence in their own voices grew, mothers began to realize that they had a choice to not accept what the experts had to say. This realization can be very empowering to women as this one change can awaken intuition as a valued mode of learning and truth seeking. This is a substantial move as it details a viable alternative for women to break free from the surveillance of those in power and breastfeed according to their own needs and those of their infants. These implications can be far reaching as breastfeeding has the potential for women to develop a sense of corporeality where they learn to value embodied knowledge and develop a greater acceptance of the maternal body as a whole. Women can learn that for breasts to be valued, they do not have to be cast as perky, firm and high or sexual. These findings have the potential to influence theories of embodiment whereby women can value their own subjective experiences, revamp negative views regarding changes in the maternal form, and to be flexible in their ways of knowing. Acknowledging and accepting these changes are important first steps for women to break free from the current breastfeeding paradigm.

Chapter 5. Discussion

With the remarkable changes that have been identified among this group of first time mothers, what impact do these findings have on the future of breastfeeding? Although current breastfeeding education has not resulted in the desired outcome for many women, it is less clear on what needs to be changed. This research hopes to clarify that uncertainty while offering suggestions for changing the current paradigm.

Moving Past Breast is Best

In our attempt to question the effectiveness of theoretical breastfeeding, we found that women were not only unprepared for postpartum engagement of breastfeeding but the structure of prenatal breastfeeding education promoted a dichotomous view where the breast was good and formula was bad. We learned that this binary led to a very robust adherence to the Breast is Best ideology that left very little room for women to negotiate when their experiences deviated from this model. Rather than question the breastfeeding model, many women felt unsupported and anxiety-ridden which often led to weaning.

In moving away from theoretical breastfeeding, we questioned the alternative of tacit learning once the women gave birth and discovered the effectiveness of learning from doing. Although the act of breastfeeding a newborn highlighted to many the degree of their unpreparedness, some new mothers noted how their best teacher was their newborn. Learning in this manner helped women bypass many of the generalized instructions and allowed them to personalize breastfeeding based on the uniqueness of their own bodies and infants. This created a mother and infant centered view of breastfeeding that led the way to a critical understanding that there wasn't a single way to breastfeed, maternal instincts were valuable, and being sensitive to the cues put forth by their infants allowed them to nurse more effectively. There is no one

answer or single model of breastfeeding that holds the answers for all women but the biggest problem lies when outside authorities try to assert that all women should breastfeed under their rules.

In an attempt to move away from the current breastfeeding model, our second research question was designed to identify the benefits of breastfeeding that lay outside the current restrictive box as a way to restructure our current notions of breastfeeding and make suggestions for a new paradigm. We began to see how women were adapting to the psychological and emotional aspects of breastfeeding that surpassed health benefits for their infant. Some mothers learned best not by reading about breastfeeding but actively engaging in breastfeeding, which further supported the ineffectiveness of a purely theoretical model. As mothers learned from their infants, they were better able to see how medical professionals and policy makers were not the only people who were experts in breastfeeding. Women began to realize that their experiences were valid and that they could be experts to their own child. These became tools that allowed mothers to resist the power behind the medical establishment who continue to dictate how and when they should nurse their infants and opened a new pathway in viewing breastfeeding education as the role of the infant was considered to influence the ongoing breastfeeding relationship as well as breastfeeding outcomes. Mothers noted how the behavior of their infants often dictated the outcome of breastfeeding but the consequences of this finding was much more significant as the infant's active role holds the possibility of not only putting the focus of breastfeeding back to the mother and infant dyad but also relieve pressure from mothers in being solely responsible for learning how to breastfeed. This finding has the potential to lessen the power breastfeeding experts hold over women as mothers learn to read their infant's cues when it comes to nursing which has the potential to increase maternal confidence. These

results highlight the continually absent role of the infant in current breastfeeding education and can change the entire timeframe of breastfeeding education from its prenatal emphasis to the early postpartum period when most weaning occurs.

Our last research question examines whether women exhibit different ways of knowing and can breastfeeding affect how women seek the truth. This sample of women confirmed that women did exhibit different ways of knowing as defined by Belenky et al. (1986) with the majority of women falling under the constructed way of knowing but the most interesting finding was how breastfeeding could promote change in their ways of knowing. Women who were silent and felt they had no voice in matters began to trust their own instincts and question self-proclaimed experts. The biggest changes were found among mothers who moved from believing in an absolute truth to one that was individually based with revelations that breastfeeding could be based on the unique needs of the mother and infant as opposed to policy makers and experts. It was remarkable to find women breastfeeding according to their own needs and those of their infants. They learned that expert advice did not have to come from outside forces but could also lie within themselves and that their experiences could be as valid as any authority figure. These maternal transformations highlight an innovative way of viewing breastfeeding that can be beneficial to women and aid in revamping breastfeeding from the current focus of a disembodied breast to an all-encompassing lifestyle that necessitates flexibility in daily living for breastfeeding to be successful.

Applying Our Findings

We suggest ways to incorporate our findings into breastfeeding education that aims to support women and enhance their breastfeeding experiences. The three aspects (e.g., theoretical vs. practical breastfeeding, expand breastfeeding to move beyond infant health benefits, and

using a woman-centered model of learning) highlighted in this research can be integrated into the current model of breastfeeding education to create a new paradigm. By examining differences between theory and practice, we have the tools to improve the current infrastructure of breastfeeding education to include the voices of women as opposed to a sole reliance on outside authorities. Expanding current definitions of breastfeeding to focus on aspects that include flexibility, lifestyle, and the role of the infant may help women find success in breastfeeding that fosters self-confidence and self-value in a corporeal sense. As a sense of self and belief in internal knowledge grows, women can use such tools to take control of their own bodies and take a stand against establishments (e.g., medical and media) that serve to control women and their bodies.

Much of the research on breastfeeding discusses the importance of support for successful breastfeeding but the actual incorporation of such support into the current model of breastfeeding has been slow to take effect (Schmied, Beake, Sheehan, McCourt & Dykes, 2011; Aksu, Küçük & Düzgün, 2011; Olson, Haider, Vangjel, Bolton, & Gold, 2010; Ingram & Johnson, 2009). The findings from this study may offer a better understanding of how women experience breastfeeding that can provide the tools necessary to promote change in an improved model of breastfeeding education. One of the biggest obstacles new mothers face when they give birth in a hospital setting is the hierarchy of power between medical professionals and their patients. The power structure inherent in the medical model translates into problems for women where they do not feel entitled to nurse the way they feel is best. The narratives of the mothers in this sample provide support for these differences in power structure whereby the Breast is Best mentality often translated into pressure to breastfeed in the "correct" manner resulting in feelings of distress when breastfeeding deviated from these preset norms. We find women questioning their

ability and decision to nurse as opposed to critiquing a faulty model. Adhering to this idealistic model resulted in many women weaning their infants as anxiety decreased their milk supply and/or they could not cope with the pressure to breastfeed under the current constraints. If each mother-infant dyad is uniquely structured, why should breastfeeding educators only teach what they construe as the "right" way to breastfeed? Where is the room for negotiation in learning how to nurse in the manner that is consistent with the needs of each mother and infant pair? We have seen mothers submit themselves to the wishes of the medical staff when they knew that their own decisions could lead to a better outcome. The women who felt uncomfortable telling the nurses that they wanted to breastfeed, asking for permission to nurse their own infant, or fighting to have their wishes put into action are all evidence of this disempowerment and how power hierarchies work to reinforce the status quo within the medical setting. Lauder (1996) finds this hierarchy to stem from beliefs where empirically based knowledge is viewed as superior to subjective knowledge bringing forward the notions of power and its relationship to knowledge. These views are not new as Habermas (1979) and Foucault (1975, 1980, 1991) noted the relationship between knowledge and power in what is considered to be the truth. We strive to transform this relationship to center on the mother and her child.

Taking a mother and infant centered approach in teaching and learning may be a much needed change in breastfeeding education. In terms of revamping breastfeeding education, a flexible approach may be more effective as compared to a rational and linear approach. As adults, we each bring to the table a slew of life experiences that shape who we are as individuals. To disregard this fact by applying one model of education only lessens the effectiveness of teaching because individuals learn in a multitude of ways. If policy makers continue to define breastfeeding in the current manner, women may not be equipped to breastfeed because there is

no personal relevance when breastfeeding is approached as a subject as opposed to a lifestyle. We have witnessed the transformations from learning about breastfeeding that bordered on robotic recitations of the benefits of breastfeeding to one that held personal meaning to a mother as she learned how to read her infant's subtle cues and feel confident that her infant was responding positively to her care. Seeing how infants affected the breastfeeding relationship and the interdependence between mother and infant may provide additional support to changing the top down structure of current breastfeeding education where the roles between teachers and learners are blurred. This flexibility not only led to positive breastfeeding outcomes but it also fostered the importance of reading infant cues which led to happier babies who thrived under the care of their mothers.

As many women gave birth in a hospital setting, we found evidence where medical professionals pressured new mothers to breastfeed according to a rigid system as opposed to encouraging them to adopt a breastfeeding lifestyle that worked best for each mother and child pair. Although many mothers may have grown accustomed to learning in the traditional manner where they are viewed as passive receptacles for health-related information, a new model of breastfeeding education would focus on encouraging a proactive way of teaching and learning that moves beyond a standardized model of breastfeeding. Rather than forcing others to learn that is based on one technique, a key difference in our new breastfeeding paradigm would be a non-linear approach that encourages mothers to follow the path that most appropriately reflects her specific needs. Emphasis would be placed on how mothers are the experts to their infants because they are the ones who spend the most time caring for them.

In conjunction with a more individualized approach, the role of the mother's lived experiences should also lie at the center of our new paradigm. Women enter motherhood with a

variety of life experiences that should be shared and acknowledged as valid because these experiences can be a great resource in problem solving and understanding new information. We seek to change current educational models that tend to disregard a woman's life experiences, assume that they come into breastfeeding as a blank slate, and learn from the same starting point and in the same manner. Fidishun (2000) believes that these life experiences are associated with how women identify who they are and we saw the impact of these associations when women who were unable to breastfeed identified themselves as failing at motherhood. Few breastfeeding courses or lactation consultants take into account the importance of life experiences as a way to enhance breastfeeding education when these life experiences can be used to reflect upon learning and help women form a new identity as mother. This sample of women felt they were being responsible and good mothers for choosing to breastfeed and labeled women who used formula in a negative light but as they were confronted with the realities of breastfeeding, some realized that their assumptions of a mother who uses formula were incorrect and that one could still be a good mother even if they did not breastfeed. Our new model of breastfeeding attempts to disband these naïve associations while concentrating on the commonalities mothers share by helping them redefine what it means to be a good mother. This type of sharing is similar to Mezirow (1991) term, reflective learning, which focuses on helping individuals transform biased assumptions toward a new understanding of information. We found a positive impact of maternal transformations in this sample of mothers as they exhibited flexibility in coping with breastfeeding difficulties and viewing their experiences as valid and valuable. Women who began by judging other mothers harshly but later changed their outlook to one that was more understanding, underwent a major transformation that characterizes reflective learning. To include aspects of reflexive learning in our new paradigm can help women examine

their own biases, critique policies that seek to disempower them, and take a stand for what is in the best interests of themselves and their infants. This step can help mothers take back the power that has been tightly held by medical professionals and policy makers as they serve as their own advocates.

Based on the narratives of women who expressed an eagerness to put their newborns onto their breast as quickly as possible right after birth, the early postpartum period can provide an excellent window to tap into this readiness to learn. Concentrating on this window of opportunity may reduce the high rates of weaning that have been identified as occurring during this vulnerable period. In order to take advantage of the eagerness of mothers during this time period, the new model of breastfeeding will devote practical application of breastfeeding techniques during the early postpartum period when the newborn has just been born. Based on our findings in this study, this change in timing with teaching practical aspects of breastfeeding during the early postpartum period as opposed to the prenatal period may be more effective in helping new mothers master the techniques of breastfeeding because each mother will be at the height of a readiness to learn mode, able to apply all techniques to her newborn in real time, and adjust her techniques under the guidance of a more experienced nursing mother who can help troubleshoot problems as they occur. With mother-to-mother support that takes into account their orientation to learn, new mothers can greatly benefit from the individual guidance from those who have extensive personal experience, and feel nurtured and supported as a whole person, not just a disembodied breast. The benefits multiply with this change as experienced mothers can use their own experiences to make a difference in another mother's life, know that any difficulties they experienced were not in vain, and realize that they are passing down knowledge that is just as valid as any self-proclaimed breastfeeding expert.

The primary focus on theoretical breastfeeding has left many women surprised and unprepared once their infants were born. To alleviate this confusion and stress, another suggestion that can benefit breastfeeding education is to focus on practical and real-life examples. In line with our theme of putting the focus back on the mother-infant dyad, we suggest the use of discussion and reflection between mothers who have no experience in breastfeeding and those who have extensive practical experience breastfeeding their infants. This type of exchange challenges the structure of the current paradigm where breastfeeding experts encourage strict boundaries between clinicians and mothers. We attempt to break down these barriers with tenets from reflective learning. The use of this mother-to-mother support has been shown to encourage a sense of community among mothers who often felt isolated and not supported by family and friends (Ingram, Rosser & Jackson, 2005). Veteran mothers, who have encountered problems in breastfeeding can become valuable resources to new mothers and assist them in the transition from the prenatal to postpartum period. By offering new mothers access beyond the idealized images of breastfeeding, women can truly be informed of the realistic side of breastfeeding within a supportive context. Hauck and Iruriata (2003) found moving past the idealized image was imperative to successful breastfeeding and mothering for two fundamental reasons. Helping women develop realistic expectations regarding breastfeeding was believed to reduce the attribution that failing at breastfeeding was self-imposed and enabling new mothers to feel at ease when discussing their difficulties lessened the stigma attached to seeking help.

Although many new mothers are quite motivated to learn how to breastfeed their infants, encountering problems during the early postpartum period may lessen previous motivation levels. When new mothers experienced difficulties in breastfeeding, they felt stress not knowing how to solve their problems. At this crossroad, some mothers took the initiative in listening to

their gut instincts and doing what they felt was right which did not always follow expert advice. In order to foster this trend, suggestions to incorporate into breastfeeding education will include a variety of activities to help foster a new mother's self-esteem. Language use in verbal exchange will focus on positive behaviors and actions, and education will be based on guided participation where experienced mothers will help new mothers acquire the skills necessary for breastfeeding. As the new mother masters each skill, the experienced mother will slowly step back from her role as educator until the new mother is able to nurse without any assistance. Learning in this manner is much more intimate and allows flexibility in changing patterns of teaching to be more suitable to the needs of the learner (Collins, 2006). While traditional pedagogy stems from a detached way of learning, guided participation focuses on the person as a whole being that cannot be separated from her belief systems, environment or emotional ties to her infant. With breastfeeding being such an intimate activity between mother and child, medical professionals who work with mothers interested in breastfeeding her infant may benefit from moving away from a traditional pedagogic approach to one that is more unified because breastfeeding is one topic where the social and emotional cannot be separated from cognition (Rathunde & Csikszenthemihalyi, 2006).

Chapter 6. Conclusion

So what does this group of first time mothers teach us about breastfeeding? To be honest, there is not much new to report. It is not new that women like to be treated with respect and dignity by those who are supposed to help them. Neither is it new that there are multiple ways to learn a task. When it comes to breastfeeding, the women in this study have shown us that mothers know instinctually what is best for their children. They also showed us how motherhood is transformative in not only a physical sense but also in life-changing psychological ways. One striking new revelation was the importance of the newborn as an active participant in the breastfeeding relationship. In many ways, identifying the ability of the infant who has been known to instinctually make his or her way toward the mother's breast acts as a metaphor for restructuring the current breastfeeding paradigm. The infant, if left uninterrupted after being born and placed on the mother's body with skin-to-skin contact, is able to listen to her instincts, make her way up to the mother's breast, and self-latch. The problem lies when they are whisked away for medical procedures or cleaning, and separated from their mothers for long stretches of time. The same effect can hold true for new mothers where interruptions from medical professionals who impose their own rules on how breastfeeding should proceed are the ones who disrupt the ability of new mothers in listening to their own inner voice. Each finding of this study viewed as a separate entity can be viewed as ordinary but the crucial difference lies in how these seemingly isolated units can be put together to form a new model of breastfeeding education that will challenge a formidable structure that has dictated for far too long how women should breastfeed.

Reflections

This project has been near and dear to me for over a decade as my family grew and each

of my three nurslings changed the way I viewed breastfeeding. Having experienced every difficulty known to breastfeeding, I was a naïve first time mother when I made my decision to give my daughter the best. Little did I know that being a good enough mother entailed more than breast milk and that all the pain and tears I went through was leading me to the path I was to take as a researcher. I am also noticing there is still a thing or two I can learn about breastfeeding now that my children have grown past the nursing stage. My close friend gave birth at the time I was writing this dissertation. This was her fourth child and she had wanted to nurse her as she was unable to do so with her older children. I was happy to oblige in answering all her questions and told her to call me if she needed any help. Her husband had noted that she was sore during the first few days postpartum so I bought the necessary tools to alleviate soreness when I went to visit her in the hospital. As we chatted in her hospital room she mentioned to me that she always nursed before she supplemented with formula and hearing those words made my heart sink. It wasn't the fact that she was supplementing that made me feel like the breastfeeding police but the mere fact that she felt she had to justify how she was feeding her newborn to me. We had a long conversation where I kept telling her that she didn't have to breastfeed for me and that she needed to do what was right for her and her baby girl. I'm just along for the ride and would be supportive of any method of feeding she engaged in. That experience made me more cognizant of the sensitivity mothers need when others show them how to breastfeed. From my standpoint, I was happy to offer her my years of expertise on breastfeeding but little did I realize that my fervor could backfire and I crossed the line from supportive friend into one of those experts who pressures women to breastfeed. I quickly learned the importance of the tone to use when explaining breastfeeding techniques to others and to try to understand the mother's standpoint so as to not come across as an authoritarian in my efforts to help. The line that distinguishes

between helpful advice and fanatical uprising is very faint. In working with this sample of women, there were times when I felt I was caught between a rock and a hard place where I wanted to help them work through the feelings of failure when breastfeeding was not going according to their prenatal expectations but I felt my words would color the uniqueness of their own experience. At those times, I stood back. These women knew they could always email me and I would respond within a day or two but I felt I needed to withhold some of my expertise in this area. I did feel that posting personal information on each of my online personal profiles opened up channels in the women that would not have been there if I had not been so forthright. For me, there was no other way to do this study.

With regards to working with qualitative data, I was often taken aback by the sheer amount of data and at times I felt overwhelmed but used the women's comments to craft a story from their words. At times I wasn't sure which story I should focus on but in reading and rereading the narratives from all the women, their words began to take their own shape. There were times when I felt this dissertation was writing itself as I let their words choose which direction to follow. As I expanded my research with the guidance of my advisors and readers, I saw myself in the throes of intensive mothering and risk reduction. I had never examined how our purchase of two SUVs or the fact that the most expensive items in our cars were the children's car seats originated in our fears of reducing all possible risk, real or imaginary. It made me question at what point do I live my life without always looking behind my back at what could happen. Being aware of this sense of impending doom has shown me how easy it is for parents to become enveloped in this mentality of potential risk and shall I dare say that I am less fearful? It may be safer to say that I am seeking a balance between real and perceived risk. I pray that we will never need to use the 3 row side curtain airbags with rollover sensor but I do

feel a tad safer when I am driving my children in that particular car.

As I seek this balance from within, I am hopeful that change is coming. A new awakening is near and there is hope in changing the way breastfeeding is taught to women. Maybe I am following the path of the women in this study and am becoming a hopeful realist. My own struggles in breastfeeding each of my 3 children showed me how forcing myself into someone's cookie cutter model was not the way for me. Little did I realize at the time that I had stumbled onto the value of listening to my inner voice and that I wasn't crazy to feel that there had to be a better way to nurse. That hard learned lesson has served me well. I find it ironic that to promote a method of breastfeeding that aims to serve women can be considered radical but it may very well be radical to view the current paradigm of breastfeeding as an injustice to women. In many ways, I have taken the linear model of breastfeeding and reshaped it to reflect a circular approach where the woman begins by listening to expert advice but comes full circle with her own knowledge and wisdom while being able to critique the expert advice. In the midst of feeling like an utter failure for not breastfeeding in the "correct" way with my first nursling, my daughter, I vowed that her experience would be much different than mine. At that time, it only mattered to me to change breastfeeding for her sake. As our family grew, each baby taught me something new about breastfeeding and as the last baby weaned himself, it dawned on me that I normalized breastfeeding in my own home with three tiny beneficiaries. I realized that breastfeeding could not be done in isolation. How my nursling behaved affected me and in turn that affected my production, which affected my baby. Breastfeeding was a highly interactive and circular process. Cause and effect in a linear fashion does not seem to be an appropriate model for breastfeeding, which has been the cornerstone of how women are currently taught with an emphasis on only one truth – the objective truth. The more we know about breastfeeding, the

more we begin to realize that what a woman knows to be true is subjective so if she cannot breastfeed according to one model, who is to say that there are no other models? To question this current model can be the key to unlocking a new type of normal that originates within each breastfeeding woman as opposed to forcing oneself to conform to a standard model.

Limitations

One of the limitations of this research is that the breastfeeding experiences of this group of 120 primaparas cannot be generalized to the entire population of all breastfeeding mothers. Although recruitment strategies aimed to collect data from a diverse socioeconomic, educational, racial and ethnic background, this sample of first time mothers is primarily comprised of an upper white middle class stratum. Our suggestions for a new model of breastfeeding can only be based on the data from this sample but the main finding of this study suggest that there is no singular breastfeeding experience that can be generalized to all breastfeeding women. Each nursing mother's experience is unique and even the changes in her day to day circumstances may necessitate different kinds of support for that moment. Although the demographic profile of this group of women is similar to the typical breastfeeding woman, care must be taken in extrapolating the findings of this study to the general population of breastfeeding mothers.

With the increase in studies involving the Internet, a major methodological concern of this mode of data collection is selection bias. The major issue with selection bias is that research findings utilizing the Internet are not generalizable to the population because the majority of Internet users are predominately White males who are married, educated, and wealthy. Although this may be a major concern in certain research studies, this self selection bias may be less of an issue in this study because other than gender, women who breastfeed in the United States share similar characteristics of the typical Internet user.

Lack of attention given to context is another issue regarding Internet research. To combat this potential problem, the women were asked open-ended questions to contextualized their data and the within groups design of the study includes a historical timeframe by focusing on three consecutive periods ranging from prenatal to late postpartum. The richness of the mother's responses helped contextualize their quantitative data and enabled the presentation of a more complete picture of the women.

Although there are many valid concerns regarding research utilizing the Internet, this form of data collection offers many benefits. Researchers who are self-funded find Internet research to be much more cost effective, as Xeroxing, mailing, transportation and other general expenses can be quite expensive. Time costs can also be mitigated with the use of online survey websites that can assist with data collection and analyses. Multiple submissions from the same participant can be prevented with the issuance of passwords to gain access to the study website and the identification of each computer's IP address. Kongsved, Basnov, Holm-Christensen, and Hjollund (2007) found higher response rates and less missing data in Internet studies. Anonymity can also be liberating to groups of new mothers who may feel ashamed to admit that breastfeeding is not working out as they had originally planned and may disclose more intimate details regarding their adjustment to motherhood without feeling stigmatized or labeled as a bad mother. Based on the importance of creating a comfortable and open atmosphere among the women in this study, anonymity was vital and may not have been as easily fostered using face-to-face interviews. A recent study by Mangan & Reip (2007) found that Web-based research is particularly suited for surveys on sensitive topics, which afforded us the opportunity to collect such rich qualitative data. In light of these limitations, we find that the benefits of collecting data off the Internet fit well with the goals of this study and its specific needs.

Appendix A

Women's Ways of Knowing Descriptions

Silence

Many women in the silence stage describe themselves as being deaf and dumb. "Deaf" because they felt they could not learn from the words of others and "dumb" because they felt they did not have a voice of their own. These women tend to listen to authorities with unquestioned obedience and not their own inner voice. When women are unable to hear their inner voice, they tend to make decisions based on the thoughts and feelings of others.

Received Knowledge

Similar to the silence stage, women in the received knowledge stage are focused on dualism where there are clear boundaries between right and wrong. They believe that words are central to the knowing process as they learn through listening. They are not yet confident in listening to their own voice and tend to focus on the voices of others who they deem as authorities. Truth is still absolute, found from outside sources and based on a hierarchical top down structure. Women who believe in such a structure tend to have trouble tolerating ambiguity or critical thinking when their unique circumstances fall outside of the clear boundaries set by authorities. Belenky, et al. (1986) states that these women are especially at the mercy of authorities because they still believe that the truth lies from outside sources and not within.

Subjective Knowledge

An important shift occurs when women no longer adhere to a dualistic nature and begin to hear their inner voice in finding the truth within themselves. As these women move away from silence and the belief that the truth and knowledge reside outside of themselves, they soon realize that the truth can come from within as they begin to listen to their inner voice. This shift is significant because they tap into an inner source of strength by valuing their intuitive powers and begin to realize that they can become their own authorities. Belenky et al. (1986) state in their study of undergraduate women that this shift was the result of a failure in trust of a male authority coupled with confirmatory experience that they could change their fate. It may be that significant life events such as childbirth and motherhood, coupled with breastfeeding difficulties may contribute to this change in mindset.

Procedural Knowledge

Procedural knowledge develops as women begin to take into account the voices of others in addition to their own inner voice. Such an integration of information enables these women to foster knowledge that incorporates both personal intuition and the external world. This change in knowledge begins a move toward critical thinking where women know that they cannot rely only on intuition or authorities but need to look beyond the surface to find the truth. Within procedural knowledge, are two types of knowing, separate and connected knowing.

Separate knowing. This type of knowing was defined by the women in the study as the way "they" (e.g., authorities) want you to think. Peter Elbow (1973) describes separate knowing as the "doubting game" and connected knowing as the "believing game." In the doubting game, the players are similar to lawyers who cross examine evidence before determining if it is worthy

of being labeled as the "truth." As players gain more experience in cross examination, they become able to form formidable arguments that are based on rational reasons. Unfortunately, this style of knowing results in many women choosing to be silent for fear of saying something that can be construed as stupid or dissolving connections between other people. Learning how to play this game results in separate knowers accepting that criticism should not be taken personally and to be more pragmatic. Separate knowers also learn how to tease apart their own beliefs from arguments where they hold no personal interest. This multiplicity in idea formation where individuals successfully construct a convincing argument that has no bearing to their own personal belief system is the epitome of separate knowing. Proponents of this approach believe that arguments are best constructed without emotional attachment but some women felt detached from this process of learning where they were too busy answering questions they had no interest in.

Connected knowing. In the believing game, connected knowing is characterized by empathy where gaining an understanding of another's experience and background is the core of understanding that particular person. Connections formed between personal experiences and the experiences of others help create a greater understanding of the phenomenon. Because many women tend to focus on connections and relationships, the believing game may be a better match for female-oriented learning strategies. Therefore, the key difference between the doubting game and the believing game stems from the origins of reasoning with propositional logic for the former and circumstantial for the latter. The connected knower is able to gain knowledge from others by inviting them to tell their story and actively listening without interruption until they understand. Knowledge continues to grow as relationships build and develop. In contrast to separate knowers, connected knowers truly care about what they want to learn. They are passionate about their cause due to genuine self-interest. As their passion grows, a greater understanding of their topic also grows.

Constructed Knowledge

Constructed knowers are searching for integrating their own intuition, rationality, and the expertise of others. The key during this phase is balance. In order to find balance, they must tolerate ambiguity due to the complexities of life and how the truth is heavily based on contextual factors. As individuals become constructed knowers, they realize that all knowledge is constructed and that they are a vital part of this process. How mothers view experts on breastfeeding is transformed where they designate an expert not only based by their words but other important aspects such as whether they have had previous breastfeeding experience, have they incorporated the voices of other breastfeeding mothers, are they passionate about their work, etc. As passionate work is coupled with the self, a new appreciation for learning evolves. Women who reach this stage of knowing realize that they are co-constructors of their own reality and knowledge.

Note. Adapted from Belenky, Clinchy, Goldberger, & Tarule, (1986) Women's Ways of Knowing.

Appendix B

Prenatal Breastfeeding Questions During the Last Trimester

Congratulations on making it to your last trimester! You will soon meet your little baby. We want to get to know you a little better and would like to ask you a few questions about your feelings about breastfeeding. Please remember that we are most interested in what you have to say so there are no right or wrong answers

1. When is your expected due date?
2. Where do you plan to give birth? ❑ hospital ❑ birth center ❑ home ❑ other (please specify)
3. What type of birth do you expect to have? ❑ vaginal ❑ cesarean
4. Did you expect any complications during childbirth? ❑ Yes ❑ No
5. Do you plan on breastfeeding your baby once he/she is born? ❑ Yes ❑ No
6. If "yes," how confident are you that you will breastfeed your baby once he/she is born?
   1 = not at all confident
   2 = not very confident
   3 = sometimes confident
   4 = confident
   5 = very confident
7. Do you know the sex of your baby or are you waiting to be surprised? ❑ Yes ❑ Surprised
8. Have you chosen a name for your baby? ❑ Yes ❑ Not Yet
   a. If "yes," what name have you chosen for your baby?
9. What do you already know about breastfeeding?
10. Have you heard of the statement, "The Breast is Best?" ❑ Yes ❑ No
11. What does the statement "The Breast is Best" mean to you?
12. How would you define a breastfeeding expert?
13. How many mothers (online or in real life) do you know who are breastfeeding or have breastfed?
14. Have you ever seen a mother breastfeeding in real life? ❑ Yes ❑ No
    a. If "yes," how did you react to that?
15. What percentage of first time mothers do you think breastfeed?
    a. How long do you think they breastfeed?
16. Do you think newborn babies prefer to breastfeed or be formula fed?
    a. ❑ breastfeed ❑ formula feed
    b. Please explain your answer
17. Tell me a story as to why you have chosen to breastfeed.
18. How do you expect breastfeeding to turn out once your baby is born?

Please feel free to add additional comments or concerns you may have.

Appendix C

The Iowa Infant Feeding Attitude Scale

We are interested in how you feel about different forms of infant feeding and would like to find out more about your preferences. For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion.

1 = strong disagreement, 2 = disagreement, 3 = neutral, 4 = agreement, 5 = strong agreement
You may choose any number from 1 to 5.

1. The nutritional benefits of breast milk last only until the baby is weaned from breast milk.*
2. Formula-feeding is more convenient than breast-feeding.*
3. Breast-feeding increases mother-infant bonding.
4. Breast milk is lacking in iron.*
5. Formula-fed babies are more likely to be overfed than are breast-fed babies.
6. Formula-feeding is the better choice if a mother plans to work outside the home.*
7. Mothers who formula-feed miss one of the great joys of motherhood.
8. Women should not breast-feed in public places such as restaurants.*
9. Babies fed breast milk are healthier than babies who are fed formula.
10. Breast-fed babies are more likely to be overfed than formula-fed babies.*
11. Fathers/partners/significant others feel left out if a mother breast-feeds.*
12. Breast milk is the ideal food for babies.
13. Breast milk is more easily digested than formula.
14. Formula is as healthy for an infant as breast milk.*
15. Breast-feeding is more convenient than formula feeding.
16. Breast milk is less expensive than formula.
17. A mother who occasionally drinks alcohol should not breast-feed her baby.*

* reverse-scored. Higher scores indicate more positive attitudes toward breastfeeding.

Appendix D

Ways of Knowing Inventory

Below you will find statements about how people learn. Please read each statement below carefully and indicate the extent to which you agree or disagree with the statement. There are no right or wrong answers to these statements. Please be completely honest in your responses. Your results will be kept completely confidential. Thank you for your participation.

A = strongly disagree, B = somewhat disagree, C = somewhat agree, D = strongly agree, E = not applicable (please explain)

1. When we have a discussion on a certain topic in our class (e.g., prenatal, childbirth, breastfeeding, Lamaze, etc.) I usually do not participate in the discussion.
2. I often find it difficult to make decisions because I tend to be easily influenced by both sides of an issue.
3. The one thing that won't let me down in this world is my intuition.*
4. I no longer rely on authorities (e.g., pediatricians, physicians, OB/GYN, American Academy of Pediatrics) for solutions in order to make a decision about what is right or wrong. Instead, I turn to myself when making a decision.*
5. Authority figures (e.g., pediatricians, physicians, OB/GYN, American Academy of Pediatrics) tend to state rules and regulations without giving an explanation about why these things are important to follow.
6. Right now, I feel like I am at a point in my life where I am walking away from others in an attempt to find out who I really am.
7. Sometimes I feel that teachers (e.g., breastfeeding, childbirth educators, etc.) want me to forget what I already know and think and memorize what they know or think.
8. Truth is not immediately accessible and you cannot "just know."
9. I consider others' ideas critically.
10. Analyzing and evaluating are important techniques when considering an alternative idea.
11. Science is a creative evaluation of facts and happenings.
12. My intuition is a strong factor when I make a decision.*
13. I pay close attention to the context in which a situation occurs before making a value judgment.
14. A woman is supposed to be very feminine.
15. A man is supposed to be very masculine.
16. In a romantic relationship, it is a man's responsibility to be the assertive one and make all the decisions concerning the relationship.
17. In a romantic relationship, men should take care of women.
18. If I had to describe who I am to someone, I would have a difficult time doing so.
19. I enjoy group discussions.*
20. When I'm in class (e.g., prenatal, childbirth, breastfeeding, Lamaze, etc.) and I don't understand what the teacher is talking about I usually just sit there and don't let on that I'm confused.

21. Most institutions of higher education (e.g., college, graduate school) seem rather distant or irrelevant to me.
22. Most educators (e.g., prenatal, childbirth, breastfeeding, Lamaze class, etc.) seem rather distant or irrelevant to me.
23. Sometimes I feel like a speeding freight train and I have no control over the events in my life.
24. I deal with members of the opposite sex only when I have to.
25. Neither parents nor society seem to support risk taking in women.
26. In the past, I have never felt that I had my own identity or sense of self.
27. In the past, I have felt that I have never had my own independent identity but instead I was always busy being someone's daughter, wife, girlfriend, mother, etc.
28. Right now, I don't plan much beyond what I'm going to do today or what I have to get done for tomorrow.
29. I really couldn't describe myself right now because it seems like I change a great deal from day to day.
30. When I have a question in class (e.g., prenatal, childbirth, breastfeeding, Lamaze, etc.) I usually keep it to myself.
31. I like to listen to someone present information that goes along with the status quo.
32. I find that I often intimidate members of the opposite sex with my mind.
33. It is important for me to use my mind to help people.
34. I often feel like I am performing a "juggling act" trying to keep the pieces of my life (work, school, family, etc.) together.
35. I often worry about constructing a meaningful life.
36. I aspire to work that contributes to improving the quality of life for others.
37. I find that instead of seeing issues in black and white I see them in shades of gray.
38. I like playing the devil's advocate (that is, arguing the opposite of what someone is saying).
39. When I have an idea about something and it differs from the way another person is thinking about it, I'll usually try to look at it from that person's point of view, see how they could say that, why they think they're right and why it makes sense.
40. It is important for me to understand <u>why</u> people think a certain way.
41. When I disagree with someone, I often find myself trying to enter the other person's frame of reference to try and understand why people think a certain way.
42. I often find myself getting too emotional when pursuing intellectual discussions.
43. I think that learning is retaining and returning what authorities (e.g., pediatricians, physicians, OB/GYN, American Academy of Pediatrics) tell me.
44. I find myself looking to others for knowledge.
45. A good student is someone who can absorb and store knowledge received from others.
46. I turn to authorities (e.g., pediatricians, physicians, OB/GYN, American Academy of Pediatrics) for the "right" answer.
47. I have to have things clearly laid out in front of me.

* Questions 19, 12, 4 and 3 are reverse coded.

Appendix E

Demographics

We would like to get to know you a little better with the following questions regarding your background and your birth experience.

1. What is today's date?
2. When is your birthday?
3. Do you consider yourself to be…?

❑ American Indian ❑ White ❑ Hispanic or Latina ❑ Asian or Pacific Islander
❑ African American or Black ❑ Other (please specify)

4. What is the highest level of education you have completed?

❑ elementary school ❑ junior high school ❑ some high school ❑ high school/GED
❑ some college ❑ associate's degree ❑ bachelor's degree ❑ master's degree
❑ professional school degree (J.D., M.D., etc.) ❑ doctorate degree (PhD, etc.)

5. How would you describe your relationship status?

❑ single ❑ dating ❑ living together ❑ domestic partnership ❑ engaged
❑ married ❑ separated ❑ divorced ❑ widowed

6. Using the scale below, please rate how you feel about your relationship with your partner/spouse?

1 = not at all confident that we will be together
2 = not very confident that we will be together
3 = sometimes confident that we will be together
4 = confident that we will be together
5 = very confident that we will be together

7. Do you consider yourself to be…?

❑ heterosexual ❑ lesbian ❑ gay ❑ bisexual ❑ transgendered ❑ other (please specify
❑ prefer not to answer

8. Which category best describes your annual income level?

❑ < $20,000 ❑ $21,000 to $40,000 ❑ $41,000 to $60,000
❑ $61,000 to $80,000 ❑ $81,000 to $100,000 ❑ > $100,000

9. Do you work outside of the home? ❑ Yes ❑ No

9a. If you answered, "yes," what is your occupation?
9b. Will you be taking maternity leave? ❑ Yes ❑ No
9c. If you answered, "yes," how many weeks long is your maternity leave? _____
9d. Using the scale below, please rate how you feel about returning to working?

1 = not at all confident
2 = not very confident
3 = sometimes confident
4 = confident
5 = very confident

Appendix F

Postpartum Breastfeeding Questions at the 3-Week Mark

Congratulations on becoming a new mother! We are interested in hearing about your new experiences and your new baby. Some questions may sound familiar to you but there is no need to try to remember what your previous answers were because your experiences have changed and we want you to focus on how you feel at this moment.

These questions ask you to describe your baby and your first attempts at breastfeeding. Please answer the following questions to the best of your abilities and remember that there are no right or wrong answers. We are interested in your unique experience.

1. What is today's date?
2. What type of birth did you actually have? ❑ vaginal ❑ cesarean
3. Where did you actually give birth? ❑ hospital ❑ birth center ❑ home ❑ other (please specify)
4. Did you experience any complications during childbirth? ❑ Yes ❑ No
    a. If you answered, "yes," please describe.
5. What is your baby's name and when was his/her birthday?
6. What was your first impression of your new baby?
7. If you had to describe your baby, what would you say?
8. If you gave birth in a hospital, tell me a story about your first attempt breastfeeding your baby while at the hospital.
9. Now tell me about your first attempt at breastfeeding once you and your baby were at home.
10. Based on these first few weeks, do you think your baby likes or dislikes to nurse? ❑ likes to nurse ❑ dislikes nursing
    a. What does your baby do to show you his/her preference?
11. Based on your expectations of what breastfeeding would be like when you were pregnant, where those expectations similar or dissimilar to what you experienced during the first few days of your baby's life? ❑ similar ❑ dissimilar
    a. Please explain.
12. Was there ever a breastfeeding situation where you weren't sure what to do? ❑ Yes ❑ No
    a. If "yes", what happened and what did you decide to do?
    b. Why did you decide to do that?
    c. Looking back now, did you feel you made the best choice? Why or why not?
    d. What did you learn from it?
13. Now that you're a mother, how many mothers (online or in real life) do you know who are breastfeeding or have breastfed?
14. Which of the following best describes the way your baby is currently fed?
    ❑ exclusive breastfeeding by breast only
    ❑ exclusive breastfeeding by breast with some expressed breast milk
    ❑ exclusive expressed breast milk only

- ❑ breast milk and other fluids but not formula
- ❑ breast milk and less than 1 bottle of formula a day
- ❑ breast milk and at least 1 bottle of formula a day
- ❑ breast given to comfort baby but not to feed baby
- ❑ no breast milk, only formula

15. Pretend your closest friend is about to have a baby and wants to breastfeed. What advice would you offer her?

Please feel free to add additional comments or concerns you may have.

Appendix G

The Maternal Breastfeeding Evaluation Scale

Now that you have some experience in breastfeeding, the following questions focus on your feelings and behaviors toward breastfeeding. Some may make you laugh aloud and others may hit close to home. Please indicate your agreement or disagreement with each statement by choosing the best answer.

SD = strongly disagree, D = disagree, N = no opinion or unsure, A = Agree, SA = Strongly Agree

1. With breastfeeding, I feel a sense of inner calm.
2. Breastfeeding is a special time with my baby.
3. My baby isn't interested in breastfeeding.
4. My baby loves to nurse
5. It is a burden being my baby's main source of food.
6. I feel extremely close to my baby when I breastfeed.
7. My baby is an eager breast feeder.
8. Breastfeeding is physically draining.
9. It is important to me to be able to nurse.
10. While breastfeeding, my baby's growth is excellent.
11. My baby and I work together to make breastfeeding go smoothly.
12. Breastfeeding is a very nurturing maternal experience.
13. While breastfeeding, I feel self-conscious about my body.
14. With breastfeeding, I feel too tied down all the time.
15. While breastfeeding, I worry about my baby gaining enough weight.
16. Breastfeeding is soothing when my baby is upset or crying.
17. Breastfeeding is like a high of sorts.
18. The fact that I can produce the food to feed my own baby is very satisfying.
19. In the beginning, my baby had trouble breastfeeding.
20. Breastfeeding makes me feel like a good mother.
21. I really enjoy nursing.
22. While breastfeeding, I am anxious to have my body back.
23. Breastfeeding makes me feel more confident as a mother.
24. My baby gains weight really well with breast milk.
25. Breastfeeding makes my baby feel more secure.
26. I can easily fit my baby's breastfeeding with my other activities.
27. Breastfeeding makes me feel like a cow.
28. My baby does not relax while nursing.
29. Breastfeeding is emotionally draining.
30. Breastfeeding feels wonderful to me.
31. Which one of these statements struck you the most? Please describe in more detail why that particular statement made such an impact on you.

Appendix H

Breastfeeding Questions at the 12-Week Mark

Now that some time has passed since your baby was born, we would like to know more about you and your baby. Please answer the following questions to the best of your abilities. Again, you may recognize some of the questions but remember that there is no need to recall your previous answers as your experiences are now different and we are interested in your opinions and views at this moment. Please note that there are no right or wrong answers.

1. What is today's date?
2. What is your baby's name and birthday?
3. What has been the biggest change you noticed in your baby since he/she was born?
4. Now that your baby is older, do you think your baby likes or dislikes to nurse?
    a. What does he/she do to let you know?
5. Think back to your expectations of how breastfeeding would turn out for you and your baby while you were pregnant. Do you feel that those expectations affected your breastfeeding experience? Please explain.
6. Knowing what you now know about breastfeeding, as opposed to while being pregnant, what have you learned about breastfeeding in these past few months?
7. Knowing what you now know about breastfeeding, as opposed to while being pregnant, what have you learned about yourself in these past few months?
8. How do you feel about breastfeeding "experts?"
    a. Do you consider yourself a breastfeeding "expert?" Why or why not?
9. If you had a second baby, how important would breastfeeding be to you?
    - ❑ not at all important
    - ❑ not very important
    - ❑ sometimes important
    - ❑ important
    - ❑ very important

    a. Please explain why you feel that way?
10. How confident would you be in breastfeeding that second baby?
    - ❑ not at all confident
    - ❑ not very confident
    - ❑ sometimes confident
    - ❑ confident
    - ❑ very confident
11. Has the number of mothers (online or in real life) you know who are breastfeeding or have breastfed increased, decreased or remained the same? ❑ increased ❑ decreased ❑ remained the same
12. Have you had to nurse your baby in public (e.g., outside of the house)? ❑ Yes ❑ No
    a. How do you now feel about mothers who nurse in public?
13. Which of the following best describes the way your baby is currently fed?
    - ❑ exclusive breastfeeding by breast only
    - ❑ exclusive breastfeeding by breast with some expressed breast milk
    - ❑ exclusive expressed breast milk only

- ❑ breast milk and other fluids but not formula
- ❑ breast milk and less than 1 bottle of formula a day
- ❑ breast milk and at least 1 bottle of formula a day
- ❑ breast given to comfort baby but not to feed baby
- ❑ no breast milk, only formula

14. What does the statement, “The Breast is Best” mean to you?
15. If you had to teach first-time mothers how to breastfeed, what would you concentrate on?

Please fee free to add additional comments or concerns you may have.

Appendix I

Weaning Questions

Sometimes breastfeeding doesn't work out and that is okay because you are the one who knows what is best for you and your baby. All experiences of breastfeeding are important in this study because we are interested in what women in your situation have to say and would like to know more about your decision to stop breastfeeding.

1. What is today's date?
2. What is your baby's name and birthday?
3. What has been the biggest change you noticed in your baby since he/she was born?
4. Now that your baby is older, do you think your baby likes or dislikes to nurse?
    a. What does he/she do to let you know?
5. For some women, breastfeeding is easy. For other women, breastfeeding is difficult. How would you describe your experience breastfeeding? Please explain.
6. Is there anything you would change about your own experience? If so, what would you change?
7. They say hindsight is 20/20 meaning that what we know now could have benefited us beforehand. What do you think is important for first-time moms to know about breastfeeding before they decide to breastfeed their baby?
8. What does the statement "The Breast is Best" now mean to you?
9. Think back to your expectations of how breastfeeding would turn out for you and your baby while you were pregnant. Do you feel that those expectations affected your breastfeeding experience? Please explain.
10. Knowing what you now know about breastfeeding, as opposed to while being pregnant, what have you learned about breastfeeding in these past few months?
11. Knowing what you now know about breastfeeding, as opposed to while being pregnant, what have you learned about yourself in these past few months?
12. How do you feel about breastfeeding "experts?"
    a. Do you consider yourself a breastfeeding "expert?" Why or why not?
13. If you had a second baby, how important would breastfeeding be to you?
    - ❑ not at all important
    - ❑ not very important
    - ❑ sometimes important
    - ❑ important
    - ❑ very important

    a. Please explain why you feel that way?
14. How confident would you be in breastfeeding that second baby?
    - ❑ not at all confident
    - ❑ not very confident
    - ❑ sometimes confident
    - ❑ confident
    - ❑ very confident
15. Has the number of mothers (online or in real life) you know who are breastfeeding or have breastfed increased, decreased or remained the same? ❑ increased ❑ decreased

❑ remained the same

16. Did you ever nurse your baby in public (e.g., outside of the house)? ❑ Yes ❑ No
    a. How do you now feel about mothers who nurse in public?
17. If you had to teach first-time mothers how to breastfeed, what would you concentrate on?

Appendix J

Online Posting Solicitation Post

Congratulations on your pregnancy! My name is Catherine Ma and I am a breastfeeding mom conducting a study on how pregnant women view breastfeeding. I am interested in women who are in their last trimester of pregnancy (week 28 to week 42) who plan to breastfeed their newborn, are first time mothers, expect a single child (e.g., no multiples), and are not experiencing any complications during pregnancy. If you fit those criteria, I would love to tell you more about this study over email.

I believe that you know yourself and your baby best and by sharing your experiences, you can help many women who are also first time mothers. I had a difficult time breastfeeding all three of my children and thought to myself, I could not be the only mom having such a hard time breastfeeding which is why I decided to study the importance of giving mothers a voice to share their experiences (good and bad) about their journey into breastfeeding.

I would like to ask you some questions regarding your decision to breastfeed and to answer a few surveys related to breastfeeding. For each time (prenatal, early postpartum, late postpartum) you complete all the questionnaires, your email address will be put in a raffle for a $100 gift card to Baby's "R" Us. If you complete the questionnaires for all three times (prenatal, early postpartum, & late postpartum), you will have three chances to win up to 3 gift cards, making your total possible winnings to be $300.00. I will not ask you for your name or any identifying information to assure anonymity and any information you disclose will be held in the strictest confidence. All information will be kept in a password-protected file that only I will have access. All experiences, good or bad, are of value in this study. Although I would love to hear about your journey into breastfeeding as I feel it will help other breastfeeding mothers, your participation is completely voluntary and you may change your mind about your participation at anytime without any consequences. You may also request a summary of the findings once I complete this study.

I hope you will be interested in being a part of this study as I believe your experiences can help educate about breastfeeding. If you have any questions about this research, you can contact me at eatatmoms@yahoo.com, or my advisor, Michelle Fine, at mfine@gc.cuny.edu. If you have questions about your rights as a participant in this study, you can contact Kay Powell, IRB Administrator, The Graduate Center/City University of New York, (212) 817-7525, kpowell@gc.cuny.edu.

Sincerely,

Catherine Ma

Appendix K

Consent Form

Congratulations on your pregnancy! My name is Catherine Ma and I am a graduate student in social-personality psychology at the Graduate Center of the City University of New York conducting a study on how pregnant women view breastfeeding. I am interested in women who are in their last trimester of pregnancy (week 28 to week 42) who plan to breastfeed their newborn, are first time mothers, expect a single child (e.g., no multiples), and are not experiencing any complications during pregnancy. I believe that you know yourself and your baby best and by sharing your experiences, you can help many women who are also first time mothers. I had a difficult time breastfeeding all three of my children and thought to myself, I could not be the only mom having such a hard time breastfeeding which is why I decided to study the importance of giving mothers a voice to share their experiences (good and bad) about their journey into breastfeeding. I would like to ask you some questions regarding your decision to breastfeed and to answer a few surveys related to breastfeeding during three time periods (e.g., while pregnant, during the first 3 weeks after you give birth, and one last time at around 12 weeks postpartum). It will take about 45 minutes for you to answer the questions for each time period and each time you complete one questionnaire, your email address will be put in a raffle for a $100 gift card to Babies "R" Us. If you complete the questionnaires for all three times (pregnant, early postpartum & late postpartum), you will have three chances to win up to 3 gift cards, making your total possible winnings to be $300.00. I will not ask you for your name or any identifying information to assure anonymity and any information you disclose will be held in the strictest confidence. All information will be kept in a password-protected file that only I will have access. There are no foreseeable risks involved in your participation as all experiences, good or bad, are of value in this study. Your participation is completely voluntary and you may change your mind about your participation at anytime without any consequences. I strongly believe that your unique journey into breastfeeding can benefit many mothers who also wish to breastfeed. I may publish results of the study, but names of people, or any identifying characteristics, will not be used in any of the publications. If you would like a copy of the study, please provide me with your address and I will send you a copy in the future. I hope you will be interested in being a part of this study as I believe your experiences can help educate people about breastfeeding. If you have any questions about this research, you can contact me at eatatmoms@yahoo.com, or my advisor, Michelle Fine, at mfine@gc.cuny.edu. If you have questions about your rights as a participant in this study, you can contact Kay Powell, IRB Administrator, The Graduate Center/City University of New York, (212) 817-7525, or kpowell@gc.cuny.edu.

□ I agree to participate in this study on breastfeeding.
□ I do not agree to participate in this study on breastfeeding.

Note. Only the women who indicated that they agreed to participate in the study were

allowed access to the online survey.

Appendix L

Reasons Pregnant Women Gave for Breastfeeding

Health benefits for baby

Health benefits for mom

Natural

Formula as inferior

Bonding

Always known that she would breastfeed

Breastfeeding as choice

Financial

Was breastfed as a child

Weight loss

Appendix M

Participant Demographics

Mother	Infant	Race/Ethnicity	Education	Occupation
Aaliyah	Aiden	Caucasian	masters degree	
Abigail	Christopher	Caucasian	bachelor's degree	Paralegal
Addison	Chloe	Caucasian	bachelor's degree	Police Officer
Alexa	Hailey Sydney	Caucasian	masters degree	External Testing Coordinator for a university
Alexandra	Ava	Caucasian	bachelor's degree	
Alexis	Joseph William	Other	some college	
Allison	Taylor	Caucasian	some college	
Alyssa	David	Caucasian	some college	Reception / admin
Amanda	Destiny	Caucasian	some college	
Amber	Stephanie	Caucasian	masters degree	Human Resources
Amelia	Juan	Caucasian	bachelor's degree	financial services compliance
Amy	Paige	Caucasian	bachelor's degree	Teacher
Andrea	Caleb	Caucasian	bachelor's degree	Service Rep
Angela	Lucas	Hispanic/Latina	some college	holistic animal therapy/ photographer
Angelina	Savannah	Caucasian	bachelor's degree	Teacher
Anna	Noah	Caucasian	masters degree	vocational disability examiner
Ariana	Makayla	Caucasian	doctorate degree (Ph.D., etc.)	professor
Arianna				
Ashley	Ethan	Caucasian	bachelor's degree	Engineer
Aubrey	Owen	Caucasian	some college	Flight Attendant
Audrey	Alexandra	Caucasian	bachelor's degree	
Autumn	Connor	Caucasian	some college	
Ava	Olivia	Caucasian	some college	Health Food Store
Avery	Jennifer	Caucasian	bachelor's degree	Retirement Plan Implementation Specialist
Bailey	Nicole	Caucasian	masters degree	
Breanna	Landon	Caucasian	bachelor's degree	
Briana	Jesus	American Indian	some college	Office Assistant
Brianna	Nicholas	Caucasian	some college	Makeup Artist
Brooke	Jose	Caucasian	masters degree	teacher
Brooklyn	Addison	Caucasian	bachelor's degree	consultant

Mother	Infant	Race/Ethnicity	Education	Occupation
Caroline	Jason Gavin Jayden	Caucasian	some college	
Catherine	Sean	Caucasian	masters degree	Technical Trainer
Chloe		Caucasian	some college	Classified Ad Representative at a local newspaper
Claire	Aaron	Caucasian	associate's degree	Paralegal
Danielle	Andrea	Hispanic/Latina	some college	Claims Supervisor in Retail
Destiny		Caucasian	high school/GED	
Diana	Alex Carlos Bryan Ian	Caucasian	masters degree	teacher
Elizabeth	Madison	Caucasian	bachelor's degree	Early Childhood Special Instructor working with families
Ella	Samuel	Caucasian	bachelor's degree	surveillance coordinator for a disability company
Emily	Jacob	Caucasian	bachelor's degree	Marketing Director
Emma	Matthew Daniel	Caucasian	some college	Military - US Navy
Erin	Kyle	Caucasian	associate's degree	Engineering Technician
Evelyn	Allison Haley Maria	Caucasian	masters degree	
Faith		Caucasian	some college	
Gabriela		Caucasian	bachelor's degree	
Gabriella	Thomas	Caucasian	bachelor's degree	Executive Assistant
Gabrielle	Jordan	Caucasian	associate's degree	Political and Election finance
Gianna	Leah	Other	masters degree	Clinical Social Worker-Mental Health Therapist
Grace	Alexander	Other	high school/GED	
Gracie	Sara	Caucasian	bachelor's degree	Registered Nurse
Hailey	Elisabeth	Caucasian	some college	
Haley	Brianna		masters degree	
Hannah	Prefer not to answer.	Caucasian	bachelor's degree	television log coordinator
Isabel				
Isabella				
Isabelle	Charles	Caucasian	associate's degree	
Jacqueline	Katelyn Gabriella	Caucasian	some college	Student

Mother	Infant	Race/Ethnicity	Education	Occupation
Jada	Mackenzie	Caucasian	high school/GED	food service
Jade	Kylie	Caucasian	bachelor's degree	Music teacher
Jasmine	Christian	Caucasian	some college	student and sales associate
Jenna	Isaiah	Caucasian	masters degree	
Jennifer	Grace	Hispanic/Latina	bachelor's degree	
Jessica	Jonathan	Caucasian	some college	Not working but was a flight attendant and worked at a travel agency
Jocelyn	Lily	Caucasian	masters degree	teacher
Jordan	Luke	Caucasian	bachelor's degree	
Julia		Hispanic/Latina	masters degree	I am a first grade bilingual teacher.
Kaitlyn	Benjamin	Caucasian	some college	
Katelyn	Jasmine Julia Morgan	Caucasian	bachelor's degree	Financial Advisor Associate
Katherine		Caucasian	some college	
Katie	Brian Eric Adrian	Caucasian	some college	
Kayla	John	African American/Black	associate's degree	
Kaylee	Justin	African American/Black	masters degree	
Kennedy	Jenna	Caucasian	bachelor's degree	graduate student, TA
Kimberly	Anna Victoria Mia	Caucasian	some college	US Coast Guard
Kylie	Jack Hunter Jackson	Caucasian	bachelor's degree	Software Engineer
Lauren	Abigail	Caucasian	masters degree	Private Teacher/Tutor
Leah	Ella	Caucasian	bachelor's degree	Sales
Leslie	Amanda	Caucasian	masters degree	Teacher
Lillian	Natalie Kayla Jessica	Caucasian	bachelor's degree	Corporate Recruiter
Lily	Gabriel	Asian/Pacific Islander	masters degree	architecture
Mackenzie	Austin	Other	professional school degree	Attorney
Madeline		Asian/Pacific Islander	masters degree	
Madelyn	Alexa	Caucasian	bachelor's degree	
Madison	Michael Joshua	Caucasian	associate's degree	

Mother	Infant	Race/Ethnicity	Education	Occupation
Makayla	Lauren	Caucasian	bachelor's degree	
Maria	Zachary Logan	Caucasian	masters degree	certified athletic trainer
Mariah	Lillian	Caucasian	bachelor's degree	
Marissa	Trinity	Other	some college	Receptionist
Mary	Rachel	Caucasian	high school/GED	
Maya	Kaylee	Caucasian	bachelor's degree	Banking Office Customer Service Representative
Megan	Sarah Sophia Alyssa	Caucasian	some college	
Melanie	Zoe	Caucasian	masters degree	
Melissa	Luis	Caucasian	bachelor's degree	data entry with a software company
Mia	Brandon	Caucasian	bachelor's degree	Accountant
Michelle	Kaitlyn	Caucasian	bachelor's degree	land use planner
Molly	Faith Kimberly Madeline	Caucasian	bachelor's degree	I own a Pilates studio
Morgan	Ashley	Caucasian	bachelor's degree	Research
Mya	Mary	Caucasian	some college	PT Cashiering at Target
Natalie	Ryan Tyler James	Caucasian	some college	desk clerk
Nevaeh	Brooke	Caucasian	masters degree	Archaeologist
Nicole	Kevin	Caucasian	high school/GED	
Olivia	Emily	Caucasian	masters degree	Nurse Practitioner
Paige	Angel	Caucasian	bachelor's degree	budget analyst
Peyton	Rebecca	African American/Black	some college	
Rachel	Alexis	Other	bachelor's degree	Photographer working in and out the home
Rebecca		Caucasian	bachelor's degree	marketing
Riley		Caucasian	masters degree	
Samantha	Andrew	Caucasian	some college	
Sara	Evan Isaac Mason	Caucasian	bachelor's degree	Teacher
Sarah	Anthony	Caucasian	doctorate degree (Ph.D., etc.)	
Savannah	Nathan	Caucasian	bachelor's degree	
Shelby	Amanda	Caucasian	bachelor's degree	TV Syndication Sales
Sierra	Aidan	Caucasian	masters degree	substance abuse counselor for pregnant and postpartum women in a residential rehab

Mother	Infant	Race/Ethnicity	Education	Occupation
Sofia	Megan	Caucasian	masters degree	Editor
Sophia	Emma	Caucasian	some college	Working at a residential treatment facility for juvenile delinquents.
Sophie	Riley	Caucasian	bachelor's degree	exec at an entertainment company
Stephanie	Elijah	Caucasian	bachelor's degree	graphic artist
Sydney		Other	bachelor's degree	Youth Counselor
Taylor	Hannah	Caucasian	masters degree	Writer
Trinity	Cameron	African American/Black	bachelor's degree	
Vanessa	Katherine	Caucasian	bachelor's degree	
Victoria	Isabella Samantha	Caucasian	bachelor's degree	
Zoe	Robert	Caucasian	bachelor's degree	Child Development Specialist
N = 123				

Appendix N

Participant Data Wave Inclusion and Breastfeeding Status

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Aaliyah	✓	✓	X	breast milk and at least 1 bottle of formula a day	
Abigail	✓	✓	X	exclusive breastfeeding by breast only	
Addison	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Alexa	✓	✓	X	exclusive breastfeeding by breast only	
Alexandra	✓	✓	X	breast milk and at least 1 bottle of formula a day	
Alexis	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Allison	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Alyssa	✓	✓	X	breast milk and less than 1 bottle of formula a day	
Amanda	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Amber	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk

Mother	Prenatal ✓= present X = dropped	Early Postpartum ✓= present X = dropped	Late Postpartum ✓= present X = dropped	Early Postpartum Breastfeeding Status	Late Postpartum Breastfeeding Status
Amelia	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Amy	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Andrea	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	breast milk and at least 1 bottle of formula a day
Angela	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Angelina	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Anna	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Ariana	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Arianna	✓	X	X		
Ashley	✓	✓	✓	breast milk and less than 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Aubrey	✓	✓	X	exclusive breastfeeding by breast only	

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Audrey	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Autumn	✓	✓	✓	breast milk and at least 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Ava	✓	✓	X	exclusive breastfeeding by breast only	
Avery	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Bailey	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Breanna	✓	✓	X	exclusive breastfeeding by breast only	
Briana	✓	✓	✓	exclusive breastfeeding by breast only	breast milk and at least 1 bottle of formula a day
Brianna	✓	✓	✓	breast milk and less than 1 bottle of formula a day	no breast milk, only formula
Brooke	✓	✓	X	exclusive breastfeeding by breast only	
Brooklyn	✓	✓	✓	breast milk and at least 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Caroline	✓	✓	✓	exclusive expressed breast milk only	exclusive breastfeeding by breast with some expressed breast milk

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Catherine	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Chloe	✓	X	✓		no breast milk, only formula
Claire	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Danielle	✓	✓	X	breast given to comfort baby but not to feed baby	
Destiny	✓	X	X		
Diana	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Elizabeth	✓	✓	✓	breast given to comfort baby but not to feed baby	breast milk and at least 1 bottle of formula a day
Ella	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Emily	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Emma	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Erin	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Evelyn	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk

Mother	Prenatal ✓= present X = dropped	Early Postpartum ✓= present X = dropped	Late Postpartum ✓= present X = dropped	Early Postpartum Breastfeeding Status	Late Postpartum Breastfeeding Status
Faith	✓	X	X		
Gabriela	✓	X	✓		breast milk and at least 1 bottle of formula a day
Gabriella	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Gabrielle	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Gianna	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Grace	✓	✓	✓	breast given to comfort baby but not to feed baby	no breast milk, only formula
Gracie	✓	✓	X	no breast milk, only formula	
Hailey	✓	✓	X	exclusive breastfeeding by breast only	
Haley	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Hannah	✓	✓	✓	no breast milk, only formula	no breast milk, only formula
Isabel	X	X	X		
Isabella	X	X	X		
Isabelle	✓	✓	X	no breast milk, only formula	
Jacqueline	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	

Mother	Prenatal ✓= present X = dropped	Early Postpartum ✓= present X = dropped	Late Postpartum ✓= present X = dropped	Early Postpartum Breastfeeding Status	Late Postpartum Breastfeeding Status
Jada	✓	✓	✓	no breast milk, only formula	no breast milk, only formula
Jade	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Jasmine	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Jenna	✓	✓	X	no breast milk, only formula	
Jennifer	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Jessica	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Jocelyn	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	breast milk and at least 1 bottle of formula a day
Jordan	✓	✓	X	exclusive breastfeeding by breast only	
Julia	✓	X	X		
Kaitlyn	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Katelyn	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Katherine	✓	X	X		
Katie	✓	✓	✓	breast milk and at least 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Kayla	✓	✓	✓	breast milk and at least 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Kaylee	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Kennedy	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Kimberly	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Kylie	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Lauren	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Leah	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Leslie	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk

Mother	Prenatal ✓= present X = dropped	Early Postpartum ✓= present X = dropped	Late Postpartum ✓= present X = dropped	Early Postpartum Breastfeeding Status	Late Postpartum Breastfeeding Status
Lillian	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Lily	✓	✓	X	exclusive breastfeeding by breast only	
Mackenzie	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Madeline	✓	X	X		
Madelyn	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Madison	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Makayla	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast only
Maria	✓	✓	X	exclusive breastfeeding by breast only	
Mariah	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Marissa	✓	✓	✓	exclusive breastfeeding by breast only	breast milk and less than 1 bottle of formula a day
Mary	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only

Mother	Prenatal ✓= present X = dropped	Early Postpartum ✓= present X = dropped	Late Postpartum ✓= present X = dropped	Early Postpartum Breastfeeding Status	Late Postpartum Breastfeeding Status
Maya	✓	✓	X	breast milk and at least 1 bottle of formula a day	
Megan	✓	✓	✓	exclusive expressed breast milk only	no breast milk, only formula
Melanie	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Melissa	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Mia	✓	✓	X	exclusive breastfeeding by breast only	
Michelle	✓	✓	X	exclusive breastfeeding by breast only	
Molly	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Morgan	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Mya	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Natalie	✓	✓	✓	exclusive breastfeeding by breast only	no breast milk, only formula
Nevaeh	✓	✓	✓	breast milk and at least 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Mother	**Prenatal**	**Early**	**Late**	**Early**	**Late**

	✓= present X = dropped	**Postpartum** ✓= present X = dropped	**Postpartum** ✓= present X = dropped	**Postpartum Breastfeeding Status**	**Postpartum Breastfeeding Status**
Nicole	✓	✓	X	breast milk and at least 1 bottle of formula a day	
Olivia	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Paige	✓	✓	X	no breast milk, only formula	
Peyton	✓	✓	X	breast milk and at least 1 bottle of formula a day	
Rachel	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast only
Rebecca	✓	X	X		
Riley	✓	X	X		
Samantha	✓	✓	✓	breast milk and at least 1 bottle of formula a day	no breast milk, only formula
Sara	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	breast milk and at least 1 bottle of formula a day
Sarah	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Savannah	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Shelby	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Sierra	✓	✓	✓	no breast milk, only formula	no breast milk, only formula
Sofia	✓	✓	✓	breast milk and less than 1 bottle of formula a day	breast milk and at least 1 bottle of formula a day
Sophia	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Sophie	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Stephanie	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
Sydney	✓	X	X		
Taylor	✓	✓	X	exclusive breastfeeding by breast with some expressed breast milk	
Trinity	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast with some expressed breast milk
Vanessa	✓	✓	✓	exclusive breastfeeding by breast with some expressed breast milk	exclusive breastfeeding by breast only
Victoria	✓	✓	X	exclusive breastfeeding by breast only	

Mother	**Prenatal** ✓= present X = dropped	**Early Postpartum** ✓= present X = dropped	**Late Postpartum** ✓= present X = dropped	**Early Postpartum Breastfeeding Status**	**Late Postpartum Breastfeeding Status**
Zoe	✓	✓	✓	exclusive breastfeeding by breast only	exclusive breastfeeding by breast with some expressed breast milk
N=123	N = 120	N = 110	N = 78		

Table 1

Descriptive Statistics for the Iowa Infant Feeding Assessment Scale (IIFAS)

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
IIFAS	N = 120	N = 107	N = 72
Mean	68.81	68.93	69.21
Standard Deviation	6.90	7.01	8.81
Range	32.00	31.00	37.00
Min/Max	52/84	51/82	48/85
Skewness	-0.23	-0.14	-0.62
Kurtosis	-0.63	-0.50	-0.21

Note. The higher the scores, the more favorable views towards breastfeeding. Mean scores are based on a 5-point scale (1 = strong disagreement to 5 = strong agreement).

Table 2

Descriptive Statistics for Actual Infant Feeding Method

	Wave	
	Early Postpartum N = 110	Late Postpartum N = 77
Mean	2.90**	3.82**
Standard Deviation	2.36	2.69
Range	7.0	7.0
Min/Max	1/8	1/8
Skewness	0.98	0.59
Kurtosis	-0.62	01.41

Note. **p < .01, The 8 categories of infant feeding outcome consists of (1) exclusive breastfeeding by breast only, (2) exclusive breastfeeding by breast with some expressed breast milk, (3) exclusive expressed breast milk only, (4) almost exclusive breastfeeding, (5) high breastfeeding, (6) partial breastfeeding, (7) token breastfeeding and (8) bottle-feeding.

Table 3

Descriptive Statistics for the Maternal Breastfeeding Evaluation Scale (MBFES)

	Wave	
	Early Postpartum N = 107	Late Postpartum N = 61
Mean	111.08*	117.77*
Standard Deviation	16.96	16.37
Range	79.00	78.00
Min/Max	61/140	63/141
Skewness	-0.70	0.15
Kurtosis	-1.27	2.12

Note. *p < .05, The higher the score, the greater maternal perceptions of breastfeeding success. Mean scores are based on a 5-point scale (1 = strongly disagree to 5 = strongly agree).

Table 4

Descriptive Statistics for the Maternal Enjoyment/Attainment Subscale from the Maternal Breastfeeding Evaluation Scale

	Wave	
	Early Postpartum N = 107	Late Postpartum N = 61
Mean	56.43	59.28
Standard Deviation	8.34	8.05
Range	38.00	40.00
Min/Max	32/70	30/70
Skewness	-0.59	-1.26
Kurtosis	0.00	2.50

Note. The higher the score, the more positive feelings toward the physical and emotional aspects of breastfeeding. Mean scores are based on a 5-point scale (1 = strongly disagree to 5 = strongly agree).

Table 5

Descriptive Statistics for the Infant Satisfaction/Growth Subscale from the Maternal Breastfeeding Evaluation Scale

	Wave	
	Early Postpartum N = 107	Late Postpartum N = 61
Mean	31.27	33.13
Standard Deviation	6.42	5.73
Range	29.00	25.00
Min/Max	11/40	15/40
Skewness	-0.97	-1.39
Kurtosis	0.49	1.61

Note. The higher the score, the greater degree of maternal perceptions of positive infant response to breastfeeding and adequate weight gain. Mean scores are based on a 5-point scale (1 = strongly disagree to 5 = strongly agree).

Table 6

Descriptive Statistics for Lifestyle/Maternal Body Image Subscale from the Maternal Breastfeeding Evaluation Scale

	Wave	
	Early Postpartum N = 107	Late Postpartum N = 61
Mean	23.38**	25.36**
Standard Deviation	4.69	5.29
Range	25.00	23.00
Min/Max	9/34	11/34
Skewness	-0.11	-0.74
Kurtosis	-.02	0.55

Note. ** $p < .01$, The higher the score, the greater degree of success in incorporating breastfeeding into one's lifestyle and positive maternal body image. Mean scores are based on a 5-point scale (1 = strongly disagree to 5 = strongly agree).

Table 7

Descriptive Statistics for the Silence Dimension from the Ways of Knowing Inventory

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
Mean	0.47*	0.46	0.45*
Standard Deviation	0.09	0.08	0.07
Range	0.44	0.38	0.31
Min/Max	.25/.69	.31/.69	.28/.59
Skewness	0.20	0.13	-0.18
Kurtosis	-0.06	-0.45	-0.48

Notes. * $p < .05$, Scores can range from 0 (no characteristics of this dimension) to 1.00 (a perfect score for exhibiting all characteristics of this dimension. The higher the score, the more the woman exhibited this particular dimension of the WOKI.

Table 8

Descriptive Statistics for the Received Dimension from the Ways of Knowing Inventory

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
Mean	0.58	0.57	0.58
Standard Deviation	0.09	0.10	0.09
Range	0.48	0.55	0.45
Min/Max	.30/.78	.28/.83	.30/.75
Skewness	-0.76	-0.31	-0.59
Kurtosis	1.13	0.12	0.40

Notes. Scores can range from 0 (no characteristics of this dimension) to 1.00 (a perfect score for exhibiting all characteristics of this dimension. The higher the score, the more the woman exhibited this particular dimension of the WOKI.

Table 9

Descriptive Statistics for the Subjective Dimension from the Ways of Knowing Inventory

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
Mean	0.50*	0.50**	0.53*,**
Standard Deviation	0.12	0.12	0.11
Range	0.50	0.50	0.45
Min/Max	.25/.75	.25/.75	.35/.80
Skewness	0.14	-0.02	0.20
Kurtosis	-0.46	-0.54	-0.50

Notes. * $p < .05$, ** $p < .01$, Scores can range from 0 (no characteristics of this dimension) to 1.00 (a perfect score for exhibiting all characteristics of this dimension. The higher the score, the more the woman exhibited this particular dimension of the WOKI.

Table 10

Descriptive Statistics for the Procedural Dimension in the Ways of Knowing Inventory

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
Mean	0.55	0.56	0.56
Standard Deviation	0.07	0.08	0.09
Range	0.37	0.38	0.38
Min/Max	.37/.73	.37/.75	.42/.81
Skewness	0.13	-0.15	0.55
Kurtosis	-0.34	0.41	0.07

Notes. Scores can range from 0 (no characteristics of this dimension) to 1.00 (a perfect score for exhibiting all characteristics of this dimension. The higher the score, the more the woman exhibited this particular dimension of the WOKI.

Table 11

Descriptive Statistics for the Constructed Dimension in the Ways of Knowing Inventory

	Wave		
	Prenatal	Early Postpartum	Late Postpartum
Mean	0.84	0.84	0.83
Standard Deviation	0.09	0.09	0.09
Range	0.36	0.46	0.36
Min/Max	.64/1.00	.54/1.00	.64/1.00
Skewness	0.11	-0.60	0.15
Kurtosis	-0.62	1.15	-0.78

Notes. Scores can range from 0 (no characteristics of this dimension) to 1.00 (a perfect score for exhibiting all characteristics of this dimension. The higher the score, the more the woman exhibited this particular dimension of the WOKI.

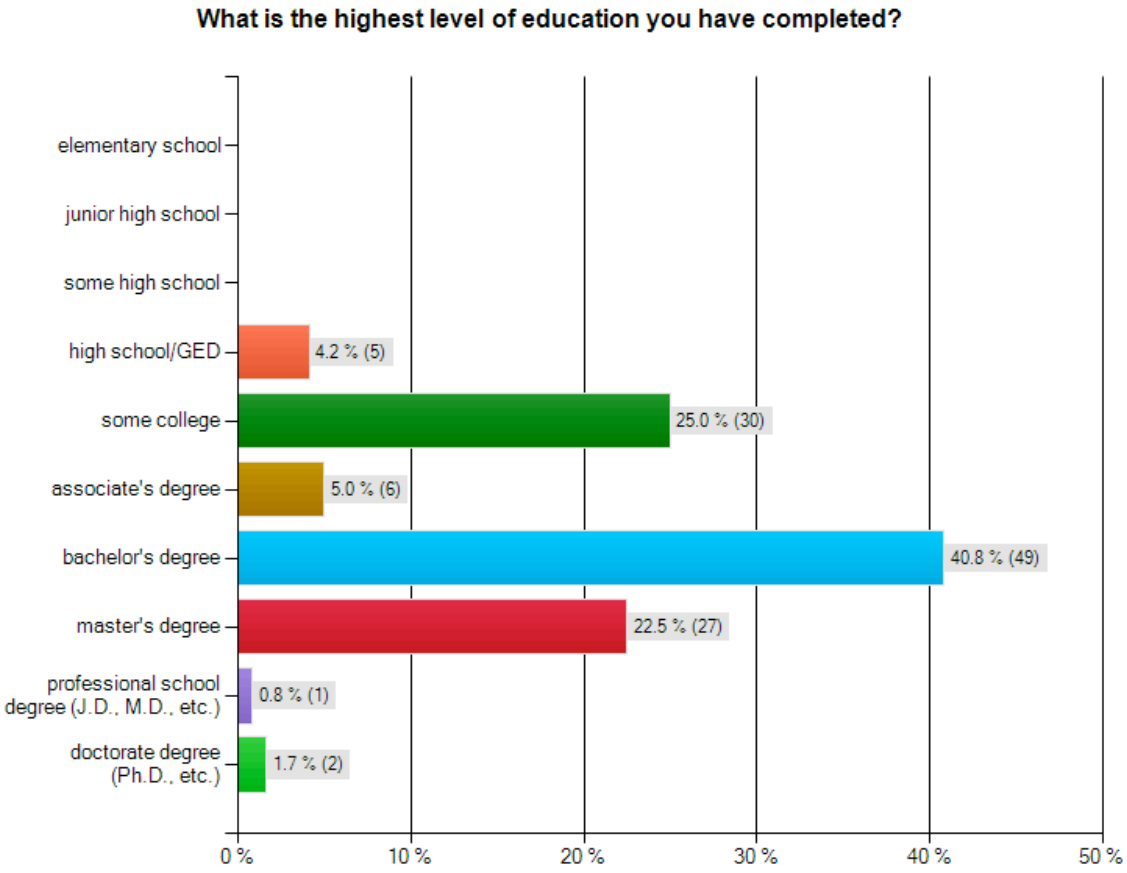

Figure 1. Participant Education Levels. This group of 120 first time mothers were highly educated with most having completed at least a bachelor's degree.

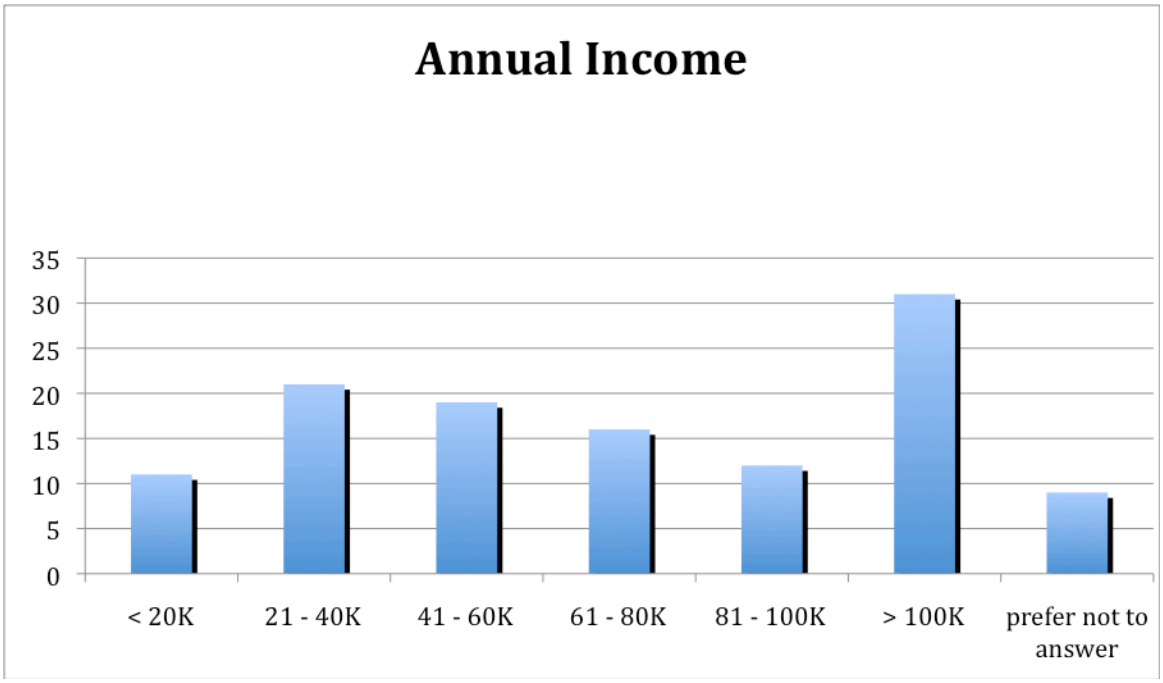

Figure 2. Participant Annual Income Levels. The majority of these women came from households that had annual incomes of over $100,000.00.

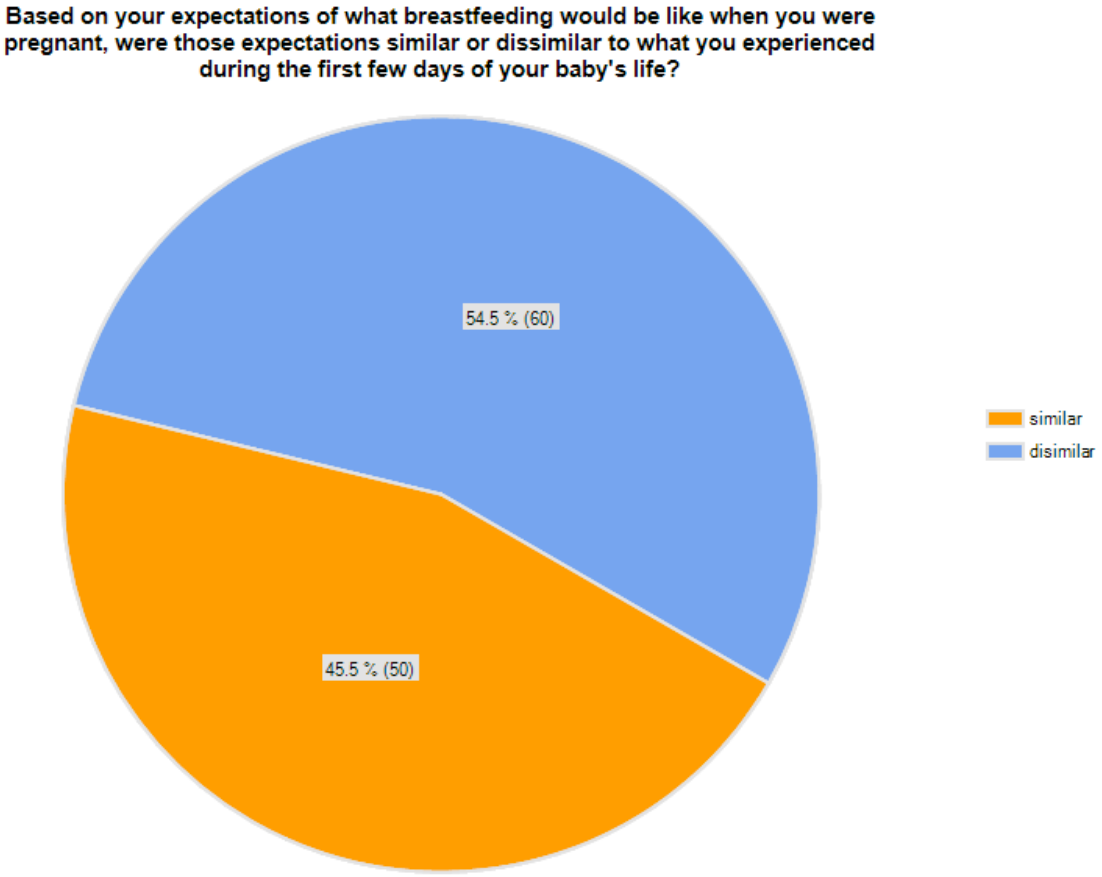

Figure 3. Prenatal Expectations and Postpartum Realities. First time mother's expectations of breastfeeding often did not match their postpartum experiences.

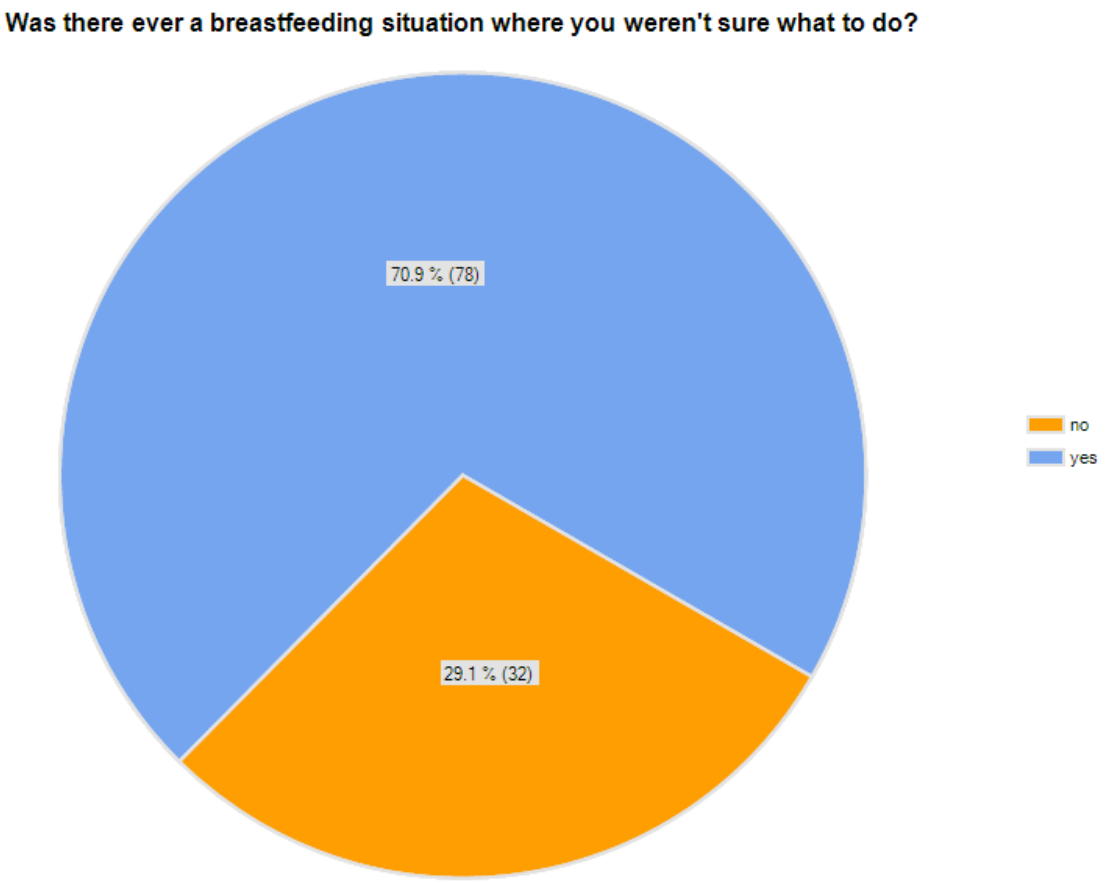

Figure 4. Presence of Unsure Breastfeeding Situation. The overwhelming majority of first time mothers encountered at least one situation where they were unsure of how to react.

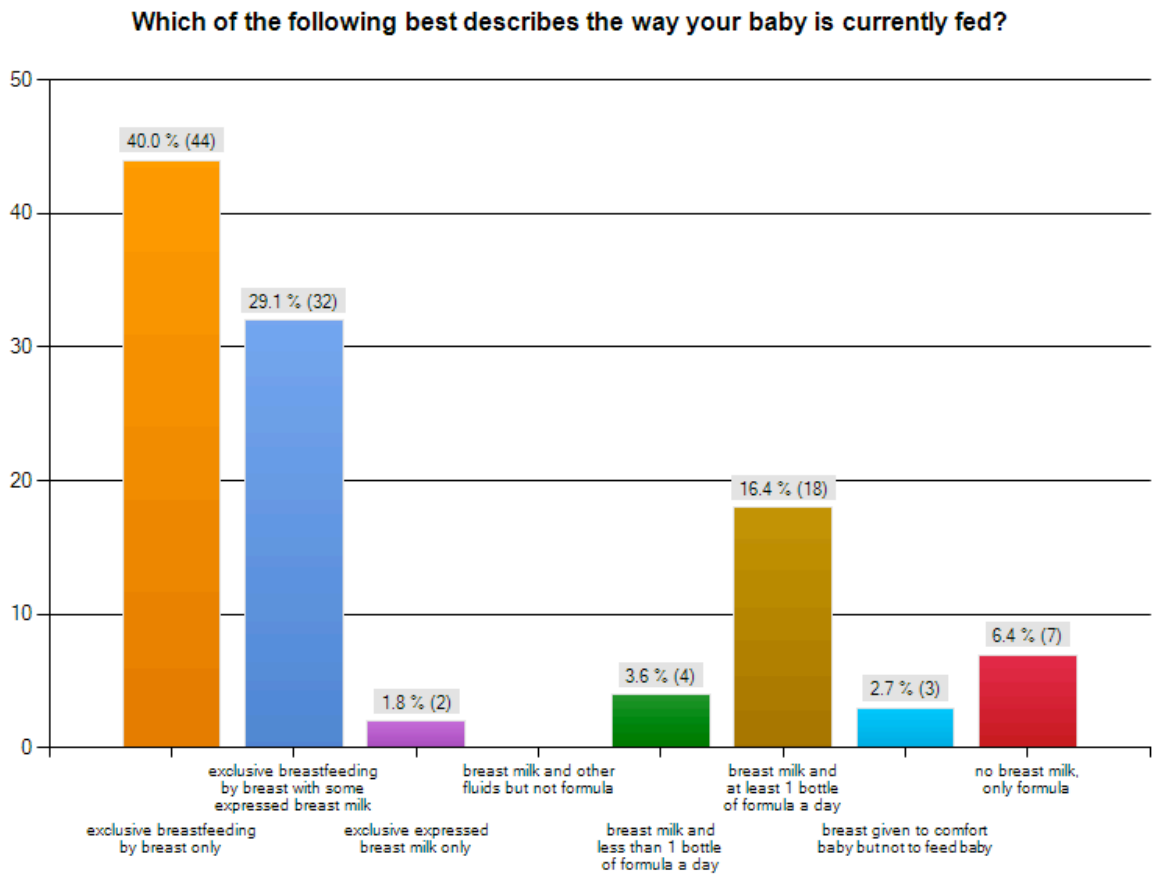

Figure 5. Early Postpartum Methods of Infant Feeding. Exclusive breastfeeding was high during the early postpartum period.

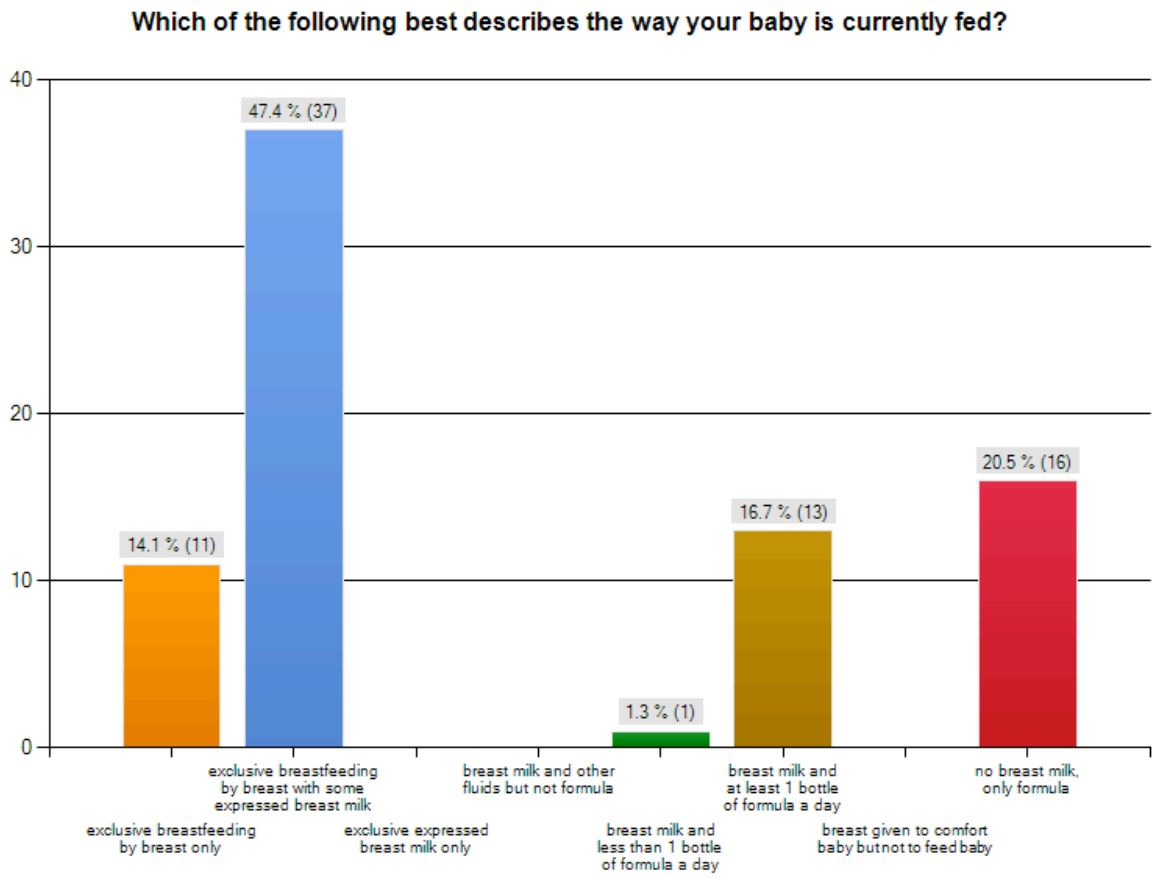

Figure 6. Late Postpartum Methods of Infant Feeding. Changes entail lower exclusive breastfeeding by breast only and a higher incidence of weaning.

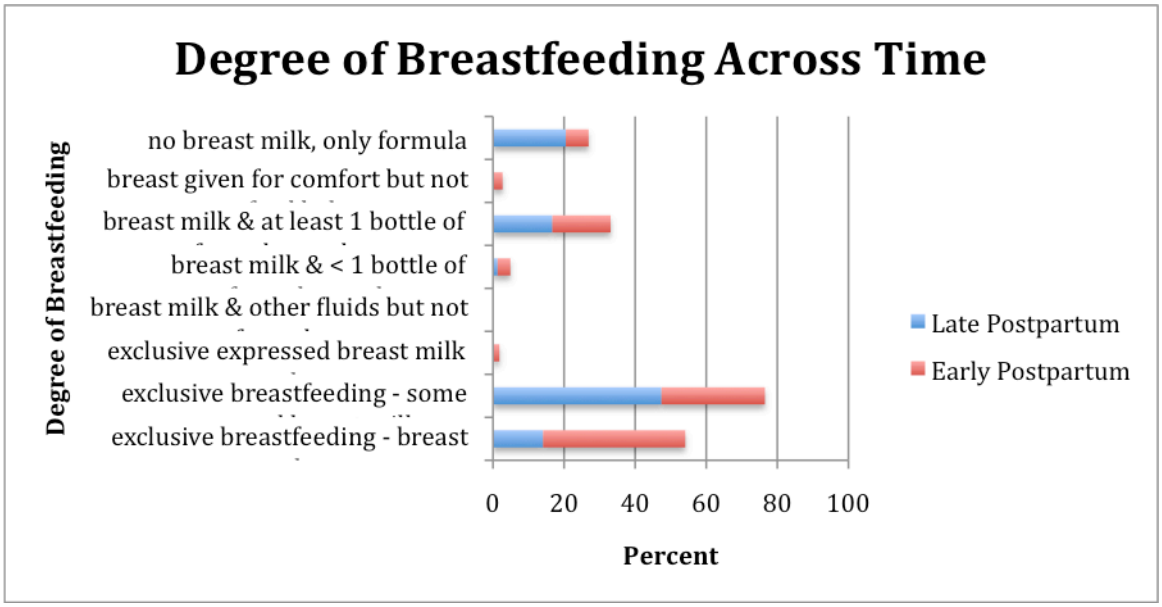

Figure 7. Actual Method of Infant Feeding Method Across Time. Infant feeding method was significantly different, $t(74) = -5.42$, $p < .001$.

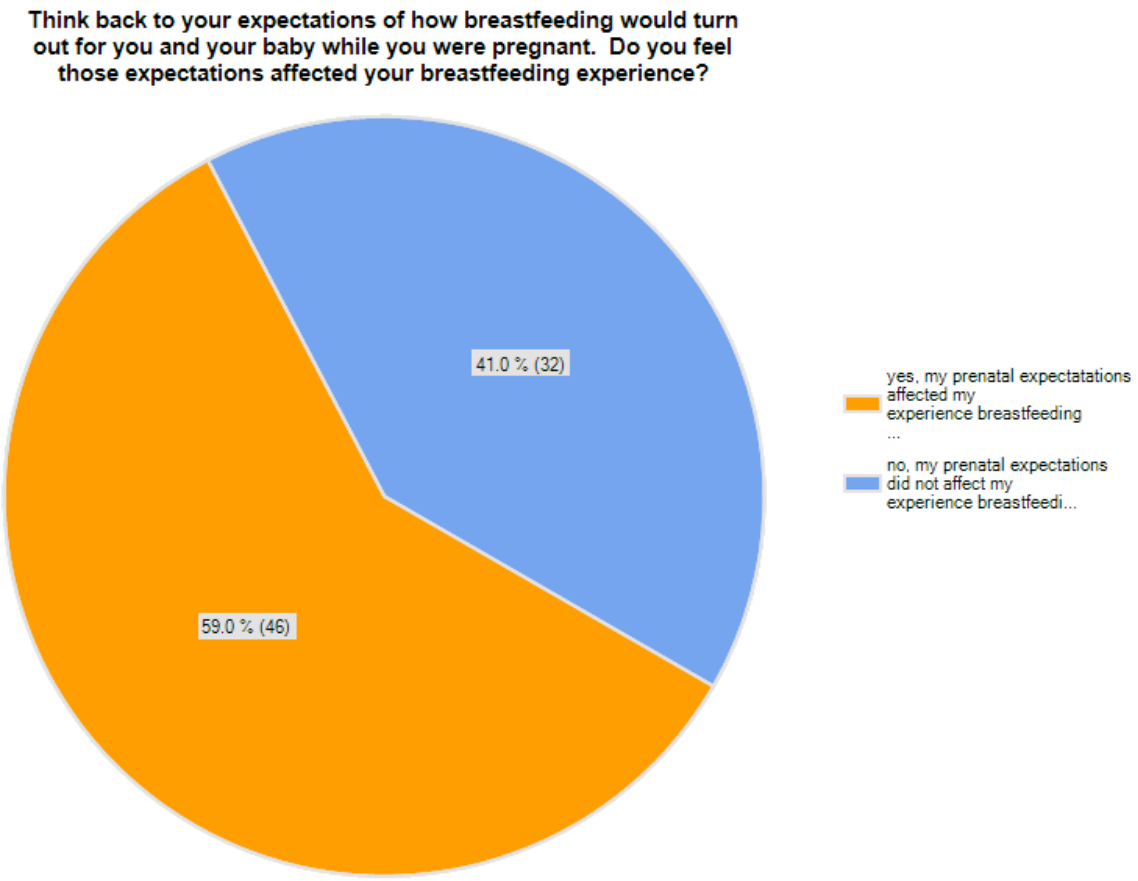

Figure 8. Effect of Prenatal Expectations on Breastfeeding Experience. The origins of prenatal breastfeeding knowledge influence how first time mothers experience breastfeeding and their breastfeeding outcome.

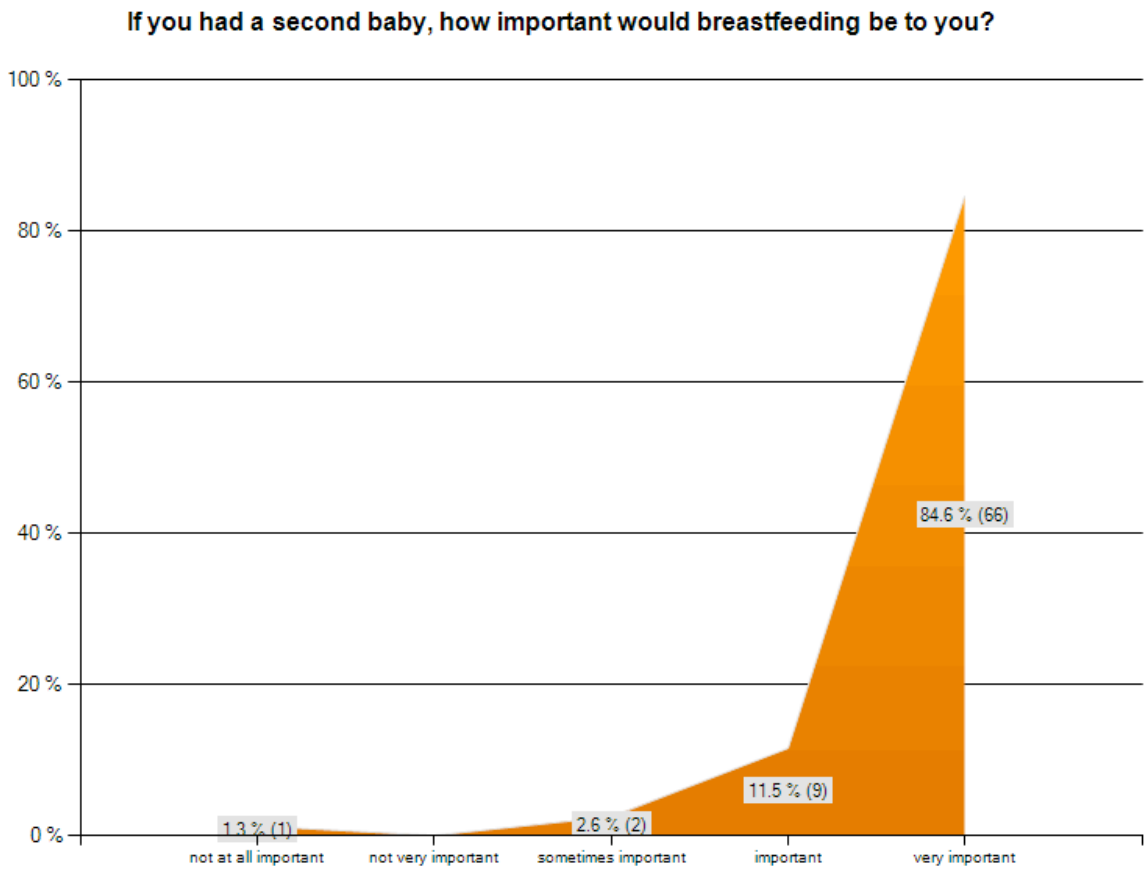

Figure 9. Importance of Breastfeeding a Second Child. Even mothers who weaned still felt strongly about the benefits of breastfeeding and expressed a strong desire to breastfeed a sibling.

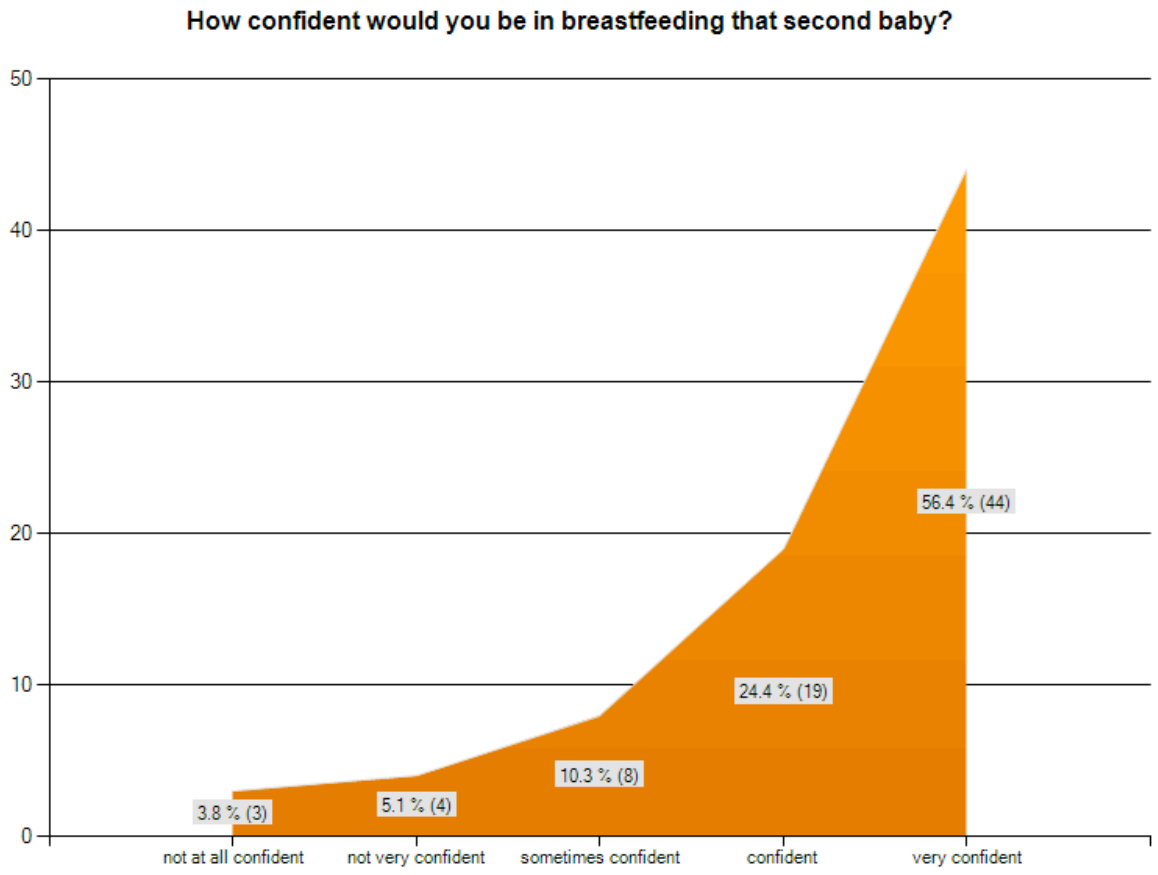

Figure 10. Confidence in Breastfeeding a Second Sibling. Although mothers expressed a strong desire to nurse a sibling, their confidence in their ability to be successful varied.

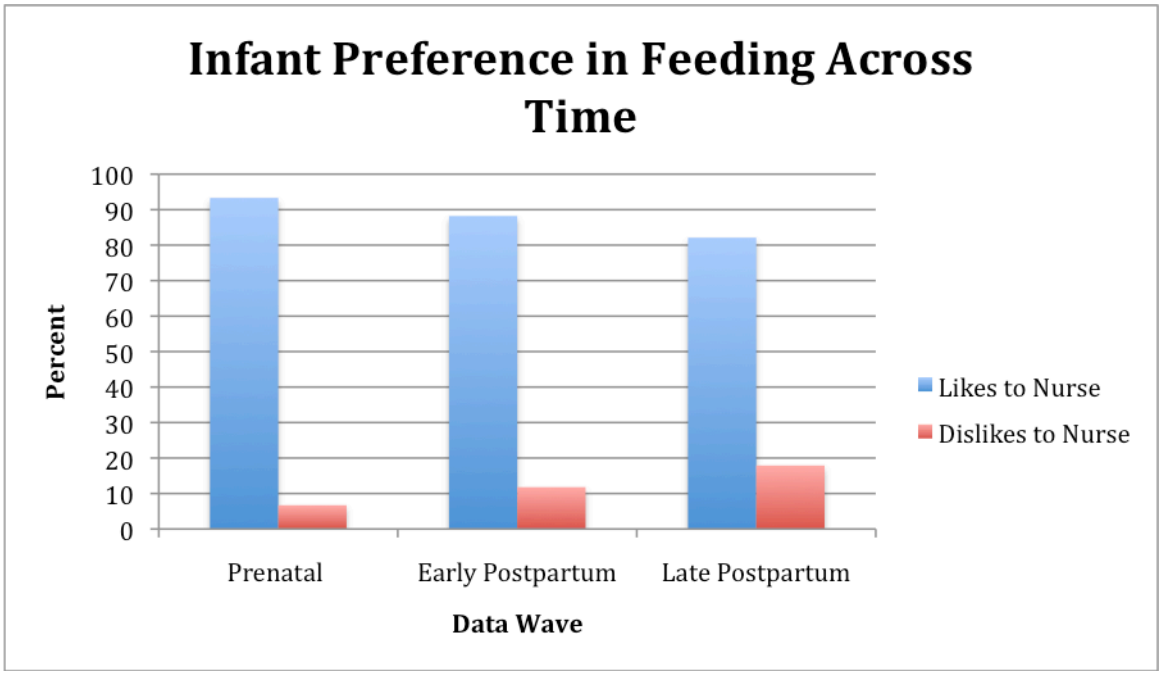

Figure 11. Maternal Reports of Infant Agency. Significant differences were found in infant preferences suggesting infants play an influential role in breastfeeding outcome, $F(2, 148) = 6.07$, $p < .01$. Pair-wise comparisons indicated that maternal perceptions of prenatal newborn preferences were significantly different from late postpartum perceptions ($p < .01$).

References

Aksu, H., Küçük, M., & Düzgün, G. (2011). The effect of postnatal breastfeeding education/support offered at home 3 days after delivery on breastfeeding duration and knowledge: a randomized trial. Journal of Maternal-Fetal & Neonatal Medicine, 24 (2), 354-361.

Alm, B., Wennergren, G., Norvenius, S. G., Skjærven, R., Lagercrantz, H., Helweg-Larsen, K., Irgens, L. M. (2002). Breast feeding and the sudden infant death syndrome in Scandinavia, 1992-95. Archives of Disease in Childhood, 86, 400-422.

Bäckström, C. A., Hertfelt Wahn, E. I., & Ekström, A. C. (2010). Two sides of breastfeeding support: experiences of women and midwives, International Breastfeeding Journal, 5, 20-27.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). Women's ways of knowing. The development of self, voice, and mind. New York: Basic Books, Inc.

Bener, A., Denic, S., & Galadari, S. (2001). Longer breast-feeding and protection against childhood leukemia and lymphomas. European Journal of Cancer, 37 (2), 234-8.

Bramson, L., Lee, J., Moore, E., Montgomery, S., Neish, C., Bahjri, K., & Melcher, C. (2010). Effect of early skin-to-skin mother--infant contact during the first 3 hours following birth on exclusive breastfeeding during the maternity hospital stay. Journal of Human Lactation, 26 (2), 130-137.

Brillinger, M. F. (1990). Helping adults learn. Journal of Human Lactation, 6 (4), 171-5.

Buczynski, P. L. (2008). Personal correspondence.

Buczynski, P. L. (1996). The Ways of Knowing Instrument (WOKI).

Buczynski, P. L. (1993). The development of a paper-and-pencil measure of Belenky, Clinchy, Goldberger and Tarule's (1986) conceptual model of women's ways-of-knowing instrument. Journal of College Student Development, 34 (3), 197-200.

Burger, S. (2011). Personal communication.

Cadogan, W. (1748). An essay upon nursing and the management of children, from birth to three years of age. London: Published for John Knapton.

Call, J. D. (1959). Emotional factors favoring successful breastfeeding of infants. Journal of Pediatrics, 55, 485-496.

Creighton, J. (2002). Benefits of breastfeeding confirmed in new research. Nation's Health, 32, 1-4.

Davis, M. K., Savitz, D. A., & Graubard, B. I. (1988). Infant feeding and childhood cancer. Lancet, 13, 365-368.

De La Mora, A., Russell, D. W., Dungy, C. I., Losch, M., & Dusdieker, L. (1999). The Iowa Infant Feeding Attitude Scale: Analysis of reliability and validity preview. Journal of Applied Social Psychology, 29 (11), 2362-2380.

Dewey, K. G., Heinig, M. J., & Nommsen-Rivers, L. A. (1995). Differences in morbidity between breast-fed and formula-fed infants. Journal of Pediatrics, 126, 696-702.

Eidelman, A. I. (2006). The Talmud and human lactation: The cultural basis for increased frequency and duration of breastfeeding among Orthodox Jewish women. Breastfeeding Medicine, 1(1), 36-40.

Fidishun, D. (2000). Andragogy and technology: integrating adult learning theory as we teach with technology. Fifth Annual Instructional Technology Conference, April 9-11,

2000, Middle Tennessee State University. Available at http://www.mtsu.edu/~itconf/proceed00/fidishun.htm

Foucault, M. (1975). The birth of the clinic. An archaeology of medical perception. New York: Vintage Books.

Foucault, M. (1980). Power/Knowledge: Selected interviews & other writings 1972 – 1977. New York: Pantheon Books.

Foucault, M. (1991). Governmentality. In G. Burchell, C. Gordon & P. Miller (Eds.) The Foucault effect: Studies in govermentality. Chicago: University of Chicago Press.

Freire, P. (2007). Pedagogy of the oppressed. 30th anniversary edition. New York: Continuum.

Gartner, L. M., & Black, L. S. (1997). Breastfeeding and the use of human milk. Pediatrics, 100, 1035-1041.

Gerhardt, S. (2004). Why love matters: How affection shapes a baby's brain. New York: Routledge.

Gillman, M. W., Rifas-Shiman, S. L., Camargo, C. A., Berkey, C. S. Frazier, A. L., Rockett, H. R. H., Field, A. E., & Colditz, G. A. (2001). Risk of overweight among adolescents who were breastfed as infants. JAMA: Journal of the American Medical Association, 285, 2461-2475.

Greiner, T., Van Esterik, P., & Latham, M. C. (1981). The insufficient milk syndrome: An alternative explanation. Medical Anthropology, 5 (2), 233-60.

Grummer-Strawn, L., Reinold, C., & Krebs, N. (2010). Use of World Health Organization and CDC growth charts for children aged 0-59 months in the United States. Morbidity and Mortality Weekly Report, 59 (RR-9), 1-15.

Gussler, J. D., & Briesemeister, L. H. (1980). The insufficient milk syndrome: A biocultural explanation. Medical Anthropology, 4 (2), 145-74.

Hoddinott, P. & Pill, R. (2000). A qualitative study of women's views about how health professionals communicate about infant feeding. Health Expectations, 3, 224-233.

Huckin, T. N. (1997). Critical discourse analysis. In T. Miller (Ed.), Functional approaches to written text. Washington, D.C.: English Language Programs, United States Information Agency.

Ingram, J. & Johnson, D. (2009). Using community maternity care assistants to facilitate family-focused breastfeeding support. Maternal & Child Nutrition, 5 (3), 276-281.

Jelliffe, D. B. & Jelliffe, E. F. P. (1978). Human milk in the modern world: Psychosocial, nutritional, and economic significance. New York: Oxford University Press.

Johnson, T., Mulder, P., & Strube, K. (2007). Mother-Infant Breastfeeding Progress Tool: A guide for education and support of the breastfeeding dyad. Journal of Obstetric, Gynecologic & Neonatal Nursing, 36, 319-327.

Keller, H. (2003). Socialization for competence: Cultural models of infancy. Human development, 46, 288-311.

Kois, W. E., Campbell, Jr., D. A., Lorber, M. I., Sweeton, J. C. (1984). Influence of breast feeding on subsequent reactivity to a related renal allograft. Journal of Surgical Research, 37 (2), 89-93.

Kongsved, S., Basnov, M., Holm-Christensen, K., & Hjollund, N. (2007). Response rate

and completeness of questionnaires: A randomized study of Internet versus paper-and-pencil versions. Journal of Medical Internet Research, 9 (3), 5.

Labbok, M., & Krasovec, K. (1990). Toward consistency in breastfeeding definitions. Studies in Family Planning, 21, 226-230.

Leff, E., Jefferis, S., & Gagne, M. (1994). The development of the Maternal Breastfeeding Evaluation Scale. Journal of Human Lactation, 10 (2), 105-111.

Litt, J. (1997). American medicine and divided motherhood: Three case studies from the 1930s and 1940s. Sociological Quarterly, 38, 285-306.

Locklin, M. P. (1995). Telling the world: Low income women and their breastfeeding experiences. Journal of Human Lactation: Official Journal Of International Lactation Consultant Association, 11 (4), 285-91.

Lucas, A., & Cole, T. J. (1990). Breast milk and neonatal necrotising enterocolitis. Lancet, 336, 1519-1523.

Ma, C. K. (2008). If the breast is best, why are breastfeeding rates so low? An in-depth look at breastfeeding from policy makers to the bottom dollar. In J. Nathanson and L. Tuley (Eds.) Mother knows best: Talking back to the "experts." Toronto: Association for Research on Mothering (ARM)/Demeter Press.

Manstead, A. S. R., Proffitt, C., & Smart, J. L. (1983). Predicting and understanding mothers'infant feeding intentions and behavior: Testing the theory of reasoned action. Journal of Personality and Social Psychology, 44, 657-671.

Mayer-Davis, E., Dabelea, D, Lamichhane, A., D'Agostino, Jr., R., Liese, A., Thomas, J.,

McKeown, R., & Hamman, R. (2008). Breast-Feeding and Type 2 Diabetes in the Youth of Three Ethnic Groups: The SEARCH for Diabetes in Youth Case-Control Study, Diabetes Care, 31, 470-475.

Merriam-Webster's Collegiate Dictionary, Eleventh Edition. (2004). Massachusetts: Merriam-Webster, Inc.

Merry, H. & Montgomery, A. (2000). Do breastfed babies whose mothers have had labor epidurals lose more weight in the first 24 hours of life. Academy of Breastfeeding Medicine News and Views, 6, 3.

Mohrbacher, N. & Kendall-Tackett, K. (2010). Breastfeeding made simple. California: New Harbinger Publications, Inc.

Morrow-Tlucak, M., Haude, R. H., & Ernhart, C. B. (1988). Breastfeeding and cognitive development in the first 2 years of life. Social Science & Medicine, 26, 635-639.

Newton, N. (1958). The influence of the let-down reflex in breast feeding on the mother-child relationship. Marriage and Family Living, 20, 18-20.

Noel-Weiss, J., Courant, G., & Woodend, A., (2008). Physiological weight loss in the breastfed neonate: a systematic review, Open Medicine, 2 (4), 11-22.

Noel-Weiss, J., Rupp, A., Cragg, B., Bassett, V., & Woodend, A. (2006). Randomized controlled trial to determine effects of prenatal breastfeeding workshop on maternal breastfeeding self efficacy and breastfeeding duration. Journal of Obstetric, Gynecologic, & Neonatal Nursing, 35, 616-624.

O'Connor, H. & Madge, C. (2004). 'My mum's thirty years out of date': The role of the Internet in the transition to motherhood. Community, Work & Family, 3, 351-

369.

Olson, B. H., Haider, S. J., Vangjel, L., Bolton, T. A., & Gold, J. G. (2010). A Quasi-Experimental Evaluation of a Breastfeeding Support Program for Low Income Women in Michigan. Maternal & Child Health Journal, 14 (1), 86-93.

Palmer, G. (2009). The politics of breastfeeding. When breasts are bad for business. London: Pinter & Martin Ltd.

Plantin, L. & Daneback, K. (2009). Parenthood, information and support on the internet. A literature review of research on parents and professionals online. BioMed Central Family Practice, 10 (34), 1-12.

Polanyi, M. (1958). Personal knowledge. Towards a post-critical philosophy. Chicago: The University of Chicago Press.

Polanyi, M. (1966). The Tacit Dimension. New York: Double Day and Company, Inc.

Porter, R. H. (2004). The biological significance of skin-to-skin contact and maternal odours. Acta Paediatrica, 93, 1560-1562.

Righard, L. & Alade, M. O. (1990). Effect of delivery room routines on success of first breastfeed. Lancet, 336 (8723), 1105-1107.

Saarinen, U. M. (1982). Prolonged breast feeding as prophylaxis for recurrent otitis media. Acta Paediatric Scandanavia, 71, 567-571

Saarinen, U. M., & Kajosaari, M. (1995). Breastfeeding as prophylaxis against atopic disease: Prospective follow-up study until 17 years old. Lancet, 346, 1065-1069.

Schmied, V., Beake, S., Sheehan, A., McCourt, C., & Dykes, F. (2011). Women's

Perceptions and Experiences of Breastfeeding Support: A Metasynthesis. Birth: Issues in Perinatal Care, 38 (1), 49-60.

Sheard, N. (1988). The role of breast milk in the development of the gastrointestinal tract. Nutrition Reviews, 46 (1), 1-8.

Sheehan, A., Schmied, V., Barclay, L. (2009). Women's experiences of infant feeding support in the first 6 weeks post-birth. Maternal & Child Nutrition, 5 (2), 138-150.

Tabachnick, B. G., & Fidell, L. S. (1996). Using multivariate statistics (3rd ed.). New York: Harper Collins.

Wang, Y. S., & Wu, S. Y. (1996). The effect of exclusive breastfeeding on development and incidence of infection in infants. Journal of Human Lactation, 88, 27-30.

Wayland, C. (2004). Infant agency and its implication for breast-feeding promotion in Brazil. Human Organization, 63 (3), 277-288.

Widstrom, A. M., Wahlberg, V., Matthiesen, A. S., Eneroth, P., Uvnas-Moberg, K., & Werner, S. (1990). Short-term effects on early suckling and touch of the nipple on maternal behavior. Early Human Development, 21 (3), 153-163.

Widstrom, A. M., Ransjo-Arvidson, A. B., Christensson, K., Matthiesen, A. S., Winberg, J., & Uvnas-Moberg, K. (1987). Gastric suction in healthy newborn infants. Effects on circulation and developing feeding behaviour. Paediatrica Scandinavica, 76 (4), 566-72.

Wolf, J. B. (2011). Is breast really best? Taking on the breastfeeding experts and the new high stakes of motherhood. New York: New York University Press.

Wolf, J. B. (2007). Is breast really best? Risk and total motherhood in the National

Breastfeeding Awareness Campaign. Journal of Health Politics, Policy and Law, 32 (4), 595-636.

Wright, A., Holberg, C., Martinez, F., Morgan, W., & Taussig, L. (1989). Breast feeding and lower respiratory tract illness in the first year of life. British Medical Journal, 299 (6705), 946-9.