

# FACTORS THAT INFLUENCE BREASTFEEDING INITIATION AND PERSISTENCE IN OHIO'S APPALACHIAN REGION



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Prepared by the Voinovich School of Leadership and Public Affairs at Ohio University

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Appalachian Region**

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## EXECUTIVE SUMMARY



### Executive Summary

Group interviews were conducted in the 19 Appalachian counties in Ohio with the lowest breastfeeding rates. The interviews focused on identifying barriers<sup>1</sup> and facilitators<sup>2</sup> to breastfeeding initiation and success. A total of 176 women currently receiving Woman, Infants, and Children (WIC) benefits participated in the group interviews and shared their breastfeeding experiences and perceptions. Findings were categorized into five levels defined by the social-ecological framework: 1) Individual factors – attitudes, beliefs, personal history; 2) Interpersonal factors – social networks and support systems, such as family, friends and work groups; 3) Organizational factors – social institutions and organizations, like hospitals and health care systems; 4) Community factors – social norms; and 5) Policy factors – local, state, and national laws and policies. These factors were interpreted within the two primary cultural frameworks experienced by participants from these counties – Appalachia and poverty.

#### Individual Factors

- Facilitators
  - Health Benefits: The known health benefits of breastfeeding had a positive impact on breastfeeding decisions.
  - Experience of Friends and Family: Hearing about the breastfeeding experiences of friends and family had a positive impact on breastfeeding decisions.
- Barriers
  - Health Risks: Perceptions that breastfeeding could compromise infant health, either due to health care providers' insistence to formula feed or the mother's

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<sup>1</sup> Influential factors that decrease the likelihood of breastfeeding initiation and/or persistence.

<sup>2</sup> Influential factors that increase the likelihood of breastfeeding initiation and/or persistence.

perception that her own negative health behaviors would cause poor milk quality, had a negative impact on breastfeeding decisions.

- Adequate Milk Supply: Concern that infants were not receiving adequate amounts of breast milk had a negative impact on breastfeeding decisions.
- First Time Mothers: First-time mothers reported having a harder time coping with breastfeeding difficulties while caring for a newborn, which had a negative impact on breastfeeding decisions.
- Pain: The pain experienced during breastfeeding and pumping had a negative impact on breastfeeding decisions.
- Time: The considerable time necessitated by breastfeeding, as well as the need to schedule the activity, had a negative impact on breastfeeding decisions.
- Fatalistic Views: The population's tendency to accept negative outcomes had a negative impact on breastfeeding decisions.

### **Interpersonal Factors**

- Facilitators
  - Support: The support of friends and family had a positive impact on breastfeeding decisions.
  - Providers Promoting Informed Choice: When providers promoted women to make an informed decision about feeding their infant, rather than pushing women to breastfeed, it had a positive impact on breastfeeding decisions.
- Barriers
  - Negative Opinions: Open opposition to breastfeeding expressed by friends and family had a negative impact on breastfeeding decisions.
  - Shared Responsibility: Family and friends expressed displeasure with being unable to share in feeding the infant, which had a negative impact on breastfeeding decisions.

### **Organizational Factors**

- Facilitators
  - Lactation Consultant Relationships and Support: Establishing a positive relationship with a lactation consultant, especially one who made herself available to provide 24/7 support, had a positive impact on breastfeeding success.
  - Provider Encouragement: Providers, especially pediatricians, who took an interest in women's feeding decisions and provided breastfeeding encouragement, had a positive impact on breastfeeding decisions.

- Barriers
  - Hospital Practices: Several hospital practices overtly or unintentionally had a negative impact on breastfeeding decisions.
  - Provider Ambivalence: Health care provider ambivalence toward breastfeeding had a negative impact on breastfeeding decisions.
  - Formula Kits: The distribution of free formula kits sent women mixed messages about the importance of breastfeeding and had a negative impact on breastfeeding decisions.

### **Community Factors**

- Mixed Impacts
  - Breastfeeding in General: How participants believed breastfeeding in general was perceived in their communities was varied; therefore it had a mixed impact on breastfeeding decisions.
  - Breastfeeding in Public: How participants believed breastfeeding in public was perceived in their communities was varied; therefore it had a mixed impact on breastfeeding decisions.
- Facilitators
  - Generational Beliefs: Older generations in the broader community were perceived as having a more positive attitude toward breastfeeding; for younger women, this reinforced their decisions to breastfeed.
  - Limited Definition of Community: When women interpreted community as being limited to friends and family it had a positive impact on breastfeeding decisions.
- Barriers
  - Broader Definition of Community: When women interpreted community as being the broader community it had a negative impact on breastfeeding decisions.
  - Sexualization of Breasts: Participants perceived the sexualization of breasts in the broader culture to have a negative impact on breastfeeding decisions.

### **Policy Factors**

- Facilitators
  - WIC Education: Participants reported receiving education about breastfeeding from WIC and this had a positive impact on breastfeeding decisions.

- WIC Relationships: Participants reported developing and maintaining relationships with WIC staff and this had a positive impact on breastfeeding decisions.
- Barriers
  - Hospital Policy: Several routine procedures in hospitals had a negative impact on breastfeeding decisions.
  - Employment: Among those women who work, not having a place to pump breast milk had a negative impact on breastfeeding decisions.

### **Assessment of Current WIC Infant Feeding Literature**

Though women indicated that WIC information was among the most valuable education they received on breastfeeding, the following recommended improvements were repeated across the different focus groups:

- Put all the information into a book, as multiple pamphlets were difficult to manage (i.e., find, keep orderly, etc.).
- Make the material easier to read and more memorable.
- Include honest and realistic information related to the difficulties women are likely to experience while breastfeeding, such as latching problems, nipple pain, engorgement, and infection.
- Include information about formula feeding.

### **Recommendations**

A table of culturally competent strategies for promoting breastfeeding initiation and persistence among Appalachian women is presented in full detail in the Recommendations section. These strategies are founded on characteristics frequently found in Appalachian culture:

- Use of story-telling techniques
- Use of humor
- Love of place
- Belief in fate
- Love of family
- Characteristics of independence, self-reliance, and pride

- Mistrust of outsiders and their intentions
- Lack of planning and procedural foresight.

## INTRODUCTION



### Introduction

The short and long-term maternal and infant health benefits of breastfeeding have been well-documented (Kronborg & Vaeth, 2009; Ryan, Wenjun, & Acosta, 2002; Witters-Green, 2003). Breast milk is widely acknowledged to provide the best and most complete nutrition for infants, with benefits to growth, immunity, development, and health (United States Department of Health and Human Services [HHS], Healthy People 2020, 2011). Infants who are breastfed are less likely to experience obesity, respiratory illness, and a myriad of other diseases (HHS, Healthy People 2020, 2011; Kronborg & Vaeth, 2009; Ryan et al., 2002; Centers for Disease Control & Prevention [CDC], 2010; Witters-Green, 2003). Breastfeeding also increases bonding between mother and infant, and reduces the likelihood of maternal breast and ovarian cancer later in life. Further, there is a distinct economic advantage to breastfeeding compared to purchasing formula (Purdy, 2010).

Initiation of breastfeeding increased from 60% in 1993 to 77% in 2006 (CDC, 2010). However, the number of women who continue to breastfeed drops off rapidly, with only 33% of infants being exclusively breastfed at 3 months. It is important to note that the largest increase in both the initiation and continuation of breastfeeding has occurred among the demographic groups historically least likely to breastfeed: younger women, less educated women, those receiving Women, Infants, and Children (WIC) benefits, African Americans, and those living in Southern and Midwestern regions of the United States (Ryan et al., 2002). It is also worth noting the strong relationship between these demographic characteristics and low socioeconomic status.

The Ohio Department of Health (ODH) commissioned this research to examine the individual attitudes and beliefs, social norms, cultural practices and other socio-ecological barriers that hinder Appalachian women who receive WIC benefits from breastfeeding. ODH identified that the lowest breastfeeding rates among women receiving WIC benefits in Ohio occur in 19 Appalachian counties in the south and eastern regions of Ohio: Adams, Athens, Belmont, Brown, Clermont, Gallia, Guernsey, Hocking, Jackson, Lawrence, Meigs, Morgan, Vinton, Monroe, Muskingum, Noble, Perry, Pike, and Washington. As such, these counties were the focus of the study. As a result of the study, recommendations are provided to enhance the effectiveness of WIC Program breastfeeding services in this area to increase breastfeeding initiation as well as long-term breastfeeding.

The study and its findings are framed by the social-ecological model, a health behavior model often utilized in health education and health behavior (McLeroy, Bibeau, Steckler, & Glanz, 1988); Loyal Jones' (1994) writing on Appalachian values; and Ruby Payne's (2005) framework for understanding poverty. A mixed-method approach was utilized to identify facilitators and barriers to breastfeeding initiation and persistence. Quantitative data was obtained using a brief questionnaire and qualitative data were gathered from group interviews conducted from July to August 2011 in each of the 19 Appalachian counties identified by ODH as having the lowest breastfeeding rates in Ohio. Key research questions for this inquiry included:

1. How do mothers in Appalachia perceive breastfeeding?
2. How do other people (e.g., healthcare providers, spouse/partner, family, friends, and workplace interactions) influence a mother's decision to initiate and/or continue breastfeeding?
3. How does the community (e.g., social norms) influence a mother's decision to initiate and/or continue breastfeeding?
4. How do organizations (e.g., health care providers) influence a mother's decision to initiate and/or continue breastfeeding?
5. How does policy influence breastfeeding in Appalachia?

## FRAMEWORK



### Framework

#### Social-Ecological Model

The social-ecological model was developed to promote public health by addressing all levels of social and environmental influence on an individual's health behaviors (McLeroy et al., 1988), rather than focusing solely on the health behaviors themselves (Newes-Adeyi, Helitzer, Caulfield, & Bronner, 2000). Within this framework, influential variables are identified as falling into one of five categories: 1) Individual – the history, beliefs, attitudes, and experiences of the individual; 2) Interpersonal – social networks and support systems, such as family, friends and work groups; 3) Organizational – social institutions and organizations, as well as the formal and informal rules and regulations under which they operate; 4) Community – relationships between organizations, institutions, and informal networks and their defined boundaries; and 5) Policy – local, state, and national laws and policies (McLeroy et al., 1988; Newes-Adeyi et al., 2000). These categories are overlapping, or nested, spheres of influence on an individual's actions (Bentley, Dee, & Jensen, 2003). Changes at each of these levels can directly and indirectly influence an individual's behaviors. Broad policy change, for instance, can influence workplace policies, which change norms and shared beliefs over time, leading to individual adoption of those beliefs, and ultimately differences in behavior.

The social-ecological model has been widely applied to health research, health promotion, and health prevention strategies (Newes-Adeyi et al., 2000). Identifying factors

related to a particular health behavior at each level of the social-ecological model can help to identify interventions applicable to each category, which can increase the likelihood of making a positive impact on individual behaviors. Further supporting this approach, the U.S. Department of Health and Human Services has defined the physical determinants of maternal health to include both environmental factors that influence a mother's health directly and those that influence her ability to engage in healthy behaviors, which directly impacts infant health (HHS, Healthy People 2020, 2011).

### **Appalachian Values**

The Appalachian region has its own culture, which also strongly influences behaviors (Jones, 1994; Weiner & Weiner, 2011). One of the strongest cultural influences is a love of place and family. People from Appalachia tend to spend their lives in the same area, among their families (Jones, 1994). This has an important influence on health behaviors for three reasons: 1) the Appalachian region is largely rural with limited healthcare resources (Weiner & Weiner, 2011); 2) the Appalachian region is predominantly poverty stricken (Weiner & Weiner, 2011); and 3) education is not strongly valued (Jones, 1994).

Further, people living in the Appalachian region are known to be spiritual, and these religious beliefs are often fatalistic. There is a general tendency toward expecting and accepting negative outcomes (Jones, 1994). "Since we never think we are perfect, we don't become cynical when we fail. When we do not fail, we are pleasantly surprised (pg. 97)." Independence, self-reliance, and pride are the primary characteristics that define the Appalachian region. However, pride is tempered with modesty, and in the region it is considered rude to suggest you know more or are better at something than anyone else.

These characteristics have defined the history of the region, and explain how people living in Appalachia drew away from outside, mainstream society (Jones, 1994). There is a general mistrust of outsiders and their intentions, which was reinforced when outside companies began exploiting the natural resources found throughout the area. Together, these characteristics and history have molded a people who are very reluctant to ask or receive assistance, instruction, or direction from others, especially from strangers. Complimenting these tendencies is the hospitality and friendliness found throughout Appalachia. People in Appalachia pride themselves

on being personable, and have been known to agree with others to avoid offending them, even though they disagree. Personality tends to be more important than other individual characteristics, including degrees and educational expertise that a person claims to hold. For these reasons, how health information is presented, and by who, will likely determine how successful the information is incorporated into behavior.

People living in Appalachia value humor, which is used to maintain social connections (Jones, 1994). Humor is often delivered in deadpan, in keeping with the modesty and understatement that tends to define the language used in the region. Self-deprecation is a common form of humor. This is another important point to keep in mind when trying to educate people in the Appalachian region.

When working within this region, it is important to remember that the predominant attitude is to accept what is, which makes changing behavior very difficult (Jones, 1994). Change needs to be undertaken with these various cultural trends in mind, and eliciting the help and support of the people in the region is necessary for serious change to begin.

A study on breastfeeding initiation confirmed that breastfeeding rates in Appalachia are lower than in many other areas in the country (Weiner & Weiner, 2011). For the Appalachian region in Ohio, it was found that breastfeeding rates were lower than the national and urban averages, but were similar to other rural areas. In addition, lower breastfeeding rates were found to occur in the lower income brackets, especially for those below 200% of poverty. The authors of this study suggest that in addition to distinctive cultural values, that low breastfeeding rates can largely be attributed to lack of insurance and high poverty rates which reduce access to health care. The relatively isolated geographic location of many Appalachian residents further increases the difficulty of obtaining initial and follow up care, such as lactation support.

## **Poverty**

Poverty is a unique culture that influences the behavior, attitudes, and values of people living within it. Low socioeconomic status is related to low achievement in a variety of areas, including health-related behaviors (Payne, 2005). Some of the reasons associated with low achievement include a lack of: planning and procedural foresight, goal setting, attention to time, data gathering, and the systematic exploration of information. The culture of poverty is one of

immediacy and the skills mentioned above tend to not be valued or taught. A woman without these skills is likely to have more difficulty with breastfeeding because she will be less likely to consider breastfeeding before giving birth, will be less likely to understand the health benefits associated with breastfeeding, will be less likely to seek help if she experiences problems with breastfeeding, and will have more problems scheduling around frequent breastfeeding.

Supporting this assumption is the finding that low income women are less likely to initiate and continue to breastfeed (Rojjanasrirat & Sousa, 2010; Ryan et al., 2002). A qualitative study of low income women indicated that this population does understand the health benefits related to breastfeeding (Rojjanasrirat & Sousa, 2010). However, a second study expanded this finding, demonstrating that this population believes that a child who receives breast milk and formula supplementation benefits just as much from the health benefits of breastfeeding as a child who is exclusively breastfed (Holmes, Chin, Kaczorowski, & Howard, 2009). Breastfeeding barriers mentioned by low income women predominantly centered around difficulties with the physical process of breastfeeding, especially adequate milk supply (Holmes et al., 2009; Rojjanasrirat & Sousa, 2010). These women indicated concern about the physical supplies needed to breastfeed, such as a quality breast pump, and the difficulties with scheduling around other commitments, such as work.

Another way that poverty has a major impact on health behaviors is by limiting a variety of resources needed for good health (Payne, 2005). Women living in poverty, especially those who live in rural areas, will have a harder time obtaining transportation to and from health care appointments. This will make it harder for these women to get help when they experience breastfeeding difficulties (Weiner & Weiner, 2011).

Poverty tends to threaten stability and limits appropriate role models who can teach appropriate behaviors (Payne, 2005). Family patterns are typically non-linear and unstable among people living in poverty. Cohabitation is more likely, as is having multiple partners, and partner turnover tends to be higher than among people living in the middle class. Having multiple partners increases the likelihood that an individual will move more often.

Among those living in poverty, especially generational poverty (defined as having been in poverty for two or more generations), communicating information is done through informal

storytelling, rather than direct, formal communication (Payne, 2005). This informal, or casual register communication, tends to focus on the character portrayal of events opposed to straight forward facts. This is counter to the way the larger society shares information. This can make it difficult or impossible for women in poverty to gain a firm understanding of appropriate breastfeeding techniques. For instance, the vocabulary used by a doctor to discuss appropriate latching may be unfamiliar to a woman living in poverty. Or a pamphlet that provides bullet-pointed facts may lack the storytelling format a woman living in poverty is used to, and she may have a hard time remembering the information.

Individuals living in poverty tend to be very sensitive to others talking to them in a parent voice, or being talked down to (Payne, 2005). This form of condescending interaction is considered to be extremely offensive and is likely to be met with anger. When women in poverty perceive they are being *told* about breastfeeding, rather than being *educated*, they may disregard this information.

Finally, many people living in poverty ascribe to a belief in fate (Payne, 2005). This is the idea that events are meant to happen and situations play out in a predestined fashion. Thus, women coming from poverty are more likely to simply accept that breastfeeding was not *meant to be* when they encounter problems, rather than trying to overcome them.

### **Shared Cultural Influences**

Poverty is widespread throughout Appalachia and the cultural values and characteristics found in the region strongly overlap with those found in the culture of poverty. These overlapping cultural influences include a fatalistic view of behaviors and events. People living in this region are prone to accepting when things do not work out rather than trying to address the problem. In relation to breastfeeding, a woman who has difficulty during breastfeeding initiation is likely to accept that it was not *meant to be* rather than looking for solutions that will help her persist with breastfeeding.

The interpersonal interactions of both cultures are similar. Humor, storytelling, and personal anecdotes are the preferred way to share information. Claiming expertise or wielding authority is likely to have a negative impact on the personal connection with an individual. For both cultures, there is a high value placed on personal relationships; the successful development

of such relationships is paramount when attempting to influence attitude and behavior change. Further, both cultures do not hold a high regard for education, and are likely to struggle with formally structured information. For these reasons, a lactation consultant who uses personal, humorous stories as a way to teach women from this region breastfeeding techniques is likely to have more success than a lactation consultant who emphasizes her education and experience or provides formal reading materials, such as how-to pamphlets.

## METHODOLOGY



### **Methodology**

While a mixed-methods approach was used to conduct this study, the study is primarily qualitative in nature. Qualitative data was gathered from group interviews and quantitative data was obtained using a brief questionnaire.

### **Interview Protocol**

The research team created a standardized open-ended interview protocol (Appendix A) to facilitate the discussion. Patton (2002) advocates the use of an interview guide for the following three reasons: (a) the limited time in an interview session is optimally utilized; (b) a systematic approach is more effective and comprehensive; and (c) an interview guide keeps the conversation focused.

A review of existing literature relating to breastfeeding facilitators and barriers informed the interview protocol. The interview protocol was framed in the social-ecological model and included questions designed to elicit responses regarding individual attitudes and beliefs towards breastfeeding, social norms and cultural practices related to breastfeeding, and other socio-ecological issues that present as barriers or facilitators to breastfeeding for Appalachian women.

## **Questionnaire**

A questionnaire was also developed to capture demographic information as well as breastfeeding history (Appendix B). Using a questionnaire to collect such information prevented women from disclosing their breastfeeding status and other personal information to the group unless they chose to do so. As with the interview script, development of the questionnaire was guided by both the social-ecological model and by a review of the current literature.

## **Participants**

Group interviews were conducted in each of the 19 Appalachian counties identified by ODH as having the lowest breastfeeding rates in Ohio. To participate in the study, women were required to have: (a) given birth to at least one child, (b) received WIC benefits, and (c) lived in one of the counties designated by ODH as the study region. A total of 176 women were interviewed. The groups ranged from 5 to 16 participants, with an average of 9 participants per group. Interviews ranged from 30-120 minutes depending on the number of participants in the group and the length and amount of discussion generated by the interview questions.

Because people of Appalachia have a strong sense of family and community, WIC staff members in each of the 19 counties recruited women that met the criteria for participating in the study. WIC staff members were asked to recruit 12-16 women per office, with the goal that 8-12 would actually come to the group interview. We asked the WIC staff members to recruit women with a variety of breastfeeding statuses, including those who: exclusively breastfed for at least six months, initiated breastfeeding but did not persist, and never breastfed. WIC staff members recruited women using methods that were culturally competent: face-to-face during WIC appointments or by telephone.

To compensate participants for their time and travel, we provided each participant with a \$30 gift card. We worked with WIC staff members for each county to determine where to purchase the gift cards (i.e., Wal-Mart and local grocery stores). This ensured that participants were able to conveniently utilize the compensation they received.

This study was approved by Ohio University's Institutional Review Board, Protocol 11E151. Each woman participating in the study chose her own pseudonym; women are identified by their pseudonyms throughout this report. It is important to note that because women were able

to choose their pseudonyms, the pseudonyms are not unique. That is, more than one woman could have chosen the same pseudonym.

## **Data Analysis**

Quantitative data obtained through the questionnaire were analyzed using descriptive statistics. Responses were aggregated across all participants and frequencies and percentages are presented in Appendix C.

Each of the 19 group interviews was transcribed and verified for accuracy. The data were analyzed using MAX-QDA, a software package for qualitative data analysis. Content analysis was used to analyze the information collected during the group interviews. Patton (2002) describes content analysis as “searching for recurring words or themes.” Text was analyzed to see what phrases, concepts, and words were prevalent throughout the participants’ responses. During this stage of the analysis, coding categories were identified. Through the coding process, data were sorted and defined into categories that were applicable to the purpose of the research. Codes were defined and redefined throughout the analysis process as themes emerged. At the end of the analysis, major codes were identified as central ideas or concepts (Glesne, 1999). These central ideas were assembled by pattern analysis for the development of major themes. From the major themes, we drew conclusions. To ensure credibility of both the procedures and the conclusions, we used analyst triangulation. Patton (2002) defines analyst triangulation as “having two or more persons independently analyze the same qualitative data and compare their findings.” Teamwork, as opposed to individual work, is likely to increase the credibility of the findings (Lincoln & Guba, 1985).

## FINDINGS



### Findings

#### Demographics

A total of 176 women participated in the 19 group interviews, and 175 women completed the voluntary questionnaire. Detailed quantitative data can be found in Appendix C. All descriptive statistics represent the number of available responses for each particular survey item, which varies between items.

Among the 175 participants for whom we have quantitative data, 106 (60.6%) reported being born in an Appalachian county: 87 from Ohio (82.1%), 16 from West Virginia (15.1%), and the remainder from Kentucky (0.9%), North Carolina (0.9%), and Pennsylvania (0.9%). Participants' median age was 27.0. The majority of participants (62.7%, N=104) reported not beginning or returning to work after the birth of their most recent child and only 41 (24.6%) participants reported regularly using childcare.

Among the participants who reported their most recent breastfeeding experiences, 55 (32.0%) were currently breastfeeding, 71 (41.3%) breastfed longer than one week, 7 (4.1%) breastfed less than one week, and 39 (22.7%) never breastfed. Among those women who had breastfed their most recent child, the majority (63.1%, N=106) reported using a breast pump at least once. The reasons women reported for discontinuing breastfeeding included: personal

reasons (53.2%, N=50), child weaned (21.3%, N=20), medical reasons (18.1%, N=17), and work (7.4%, N=7).

Many participants reported having taken a prenatal class (45.9%, N=79). Slightly fewer reported having taken a breastfeeding class (35.1%, N=60). There was a high overlap between class attendance, with 42 women (25.0%) reporting having attended both classes.

### **Individual Level Factors Impacting Breastfeeding**

Within the social-ecological model, the individual category encompasses the history, beliefs, attitudes, and experiences of the individual. These are the factors, unique to the individual's experience, that have influenced her choice to try breastfeeding, her success at initiating breastfeeding, and the duration she breastfed her infant. Many different factors are likely contributors; however, the literature has identified the barriers and facilitators that have the largest impact.

**Literature review.** A variety of individual factors can influence a woman's decision to initiate breastfeeding, as well as her success and duration. First time mothers are less likely to initiate breastfeeding and continue to breastfeed at 6 months compared to their more experienced counterparts (Ryan et al., 2002). First time mothers also tend to experience more difficulty establishing breastfeeding (Dewey, Nommsen-Rivers, Jeinig, & Cohen, 2003; Ruowei, Fein, Chen, & Grummer-Strawn, 2008) and are more likely to report discontinuing breastfeeding because "I wanted my body back" (Ruowei et al., 2008). Parity, the mother's experience with birth, has been shown to be an influential factor for breastfeeding initiation and success (Bentley et al., 2003; Ruowei et al., 2008; Ryan et al., 2002). Primiparas, first time mothers, have less self confidence in their ability to successfully breastfeed than multiparas, who have experienced child birth and caring for an infant.

Intention to breastfeed has been demonstrated to be a strong predictor of breastfeeding initiation (Bentley et al., 2003; Ryan et al., 2002). However, there are conflicting findings on the impact of a mother's attitude toward breastfeeding and long term breastfeeding success (Parkinson, Russell-Bennett, & Previte, 2010). Nevertheless, studies have found that women who have positive attitudes toward breastfeeding and a strong determination to breastfeed long term

are more likely to overcome difficulties related to working outside of the home and successfully breastfeeding their infants (Rojjanasrirat & Sousa, 2010).

The perceived ease of breastfeeding in comparison to formula feeding also differs across individuals. Some women believe that formula feeding is easier because it is easier to schedule and eliminates concerns about appropriate infant weight gain (Rojjanasrirat & Sousa, 2010). Some women also report that formula feeding is less embarrassing, more reassuring because one can visually monitor how much milk an infant is eating, and is easier when someone else has to care for the baby (Moore & Coty, 2006). Other women believe that breastfeeding is easier, more satisfying for child and mother, healthier, more natural, more economic, and more convenient (Moore & Coty, 2006); but that expressing milk for feeding in the mother's absence was more complicated than formula feeding (Holmes et al., 2009). The feeding method that family and friends have used seems to influence how each feeding method is perceived by the individual (Rojjanasrirat & Sousa, 2010). Another factor that influences perceptions of breastfeeding is concerns about their own health – stress levels, diet, etc. – and how these variables can impact the health of their baby if they were breastfeeding.

After choosing to initiate breastfeeding, experiencing problems in the first week postpartum has been shown to negatively impact continued breastfeeding efforts (Dewey, et al., 2003; Kronborg & Vaeth, 2009), even among mothers with a high motivation to exclusively breastfeed (Dewey et al., 2003). Early problems documented in breastfeeding include improper breastfeeding technique, breast and nipple pain, difficulty latching, ineffective sucking, ineffective milk transfer, and damaged nipples (Kronborg & Vaeth, 2009; Ruowei et al., 2008). This discomfort, which is more common in first-time mothers, increases the likelihood of discontinuing breastfeeding efforts (Ruowei et al., 2008).

Further, many women experience a delay with milk onset; during this time, infant weight loss concerns may prompt medical providers to advocate formula feeding for the health of the child (Dewey et al., 2003). A delay in milk onset was shown to be related to a number of individual factors: being a first time mother, cesarean delivery (especially emergency cesarean), greater maternal weight gain during pregnancy, use of labor pain medication (which was related to delays only for mothers whom this was a second or later birth), higher maternal Body Mass Index, longer labor, the use of Pitocin to induce labor, flat or inverted nipples, greater interval

without sleep prior to labor, and the exclusive use of IV fluids in the first 48 hours postpartum (Dewey et al., 2003). First time mothers were at a greater risk of milk onset delays when they gave birth to a large infant.

Milk onset delays exacerbate maternal concerns about inadequate milk supply. Insufficient milk supply is a chronic concern for many women and is among the most frequently cited reasons for discontinuing breastfeeding throughout the first year postpartum (Ruowei et al., 2008). Mothers want to do whatever they can to increase the health and comfort of their infants. When a health provider suggests that a mother supplement with formula, often due to infant weight gain concerns, this recommendation is often followed (Witters-Green, 2003). Supplementation can lead to physical problems for a breastfeeding mother, such as painful engorgement, infection from inadequate milk drainage, and nipple damage. Often these physical factors lead to increased supplementation, decreased breastfeeding and decreased breast milk supply, which further increases the need for supplementation.

Reasons provided for discontinuing breastfeeding differed across the first year of a child's life – these factors were all related to discontinuing breastfeeding when adjusting for known influential variables, including maternal age, parity, marital status, ethnicity, education and socioeconomic status (Ruowei et al., 2008). Women who stopped breastfeeding in the first two months postpartum most frequently mentioned problems with latching, sucking, and adequate milk supply or a child's lack of satisfaction with breast milk alone. For women who discontinued breastfeeding when their child was between 3 and 8 months of age, inadequate milk supply and infant dissatisfaction with breast milk remained main reasons, in addition to a child weaning his/herself. Inadequate milk supply was also mentioned by mothers who stopped breastfeeding when their infant was over 8 months old, in addition to the child biting, and the child weaning his/herself. Other reasons provided for discontinuing breastfeeding included lactation issues (e.g., pain, engorgement, and nipple damage), psychosocial factors (e.g., inconvenience, inability to leave child for extended time periods with others, and being uncomfortable breastfeeding the child outside the home), personal decisions (e.g., disliking breastfeeding, wanting to smoke, and wanting independence from the infant), barriers to pumping, and medical reasons.

Maternal self-efficacy, a woman's belief and self-confidence in her ability to breastfeed, has been found to be a good predictor of breastfeeding duration (Dennis & McQueen, 2007; Moore & Coty, 2006). A woman's perception of breastfeeding difficulties is also a predictor of breastfeeding duration (Dennis & McQueen, 2007). Research has found that women who experience difficulties breastfeeding in the first week have higher depressive symptoms (Dennis & McQueen, 2007), and maternal depressive symptoms were found to be negatively related to breastfeeding duration. Women who demonstrated depressive symptoms reported lower self-efficacy and higher dissatisfaction with breastfeeding, and had more concerns about adequate milk supply.

A woman's situation is a primary determinant of successful long term breastfeeding. A woman's particular job can hinder her ability to use a breast pump at work and make it more difficult to continue breastfeeding long term (Rojjanasrirat & Sousa, 2010). A woman who works part-time is more likely to breastfeed than a woman who works full-time (Ryan et al., 2002). Working mothers are just as likely to initiate breastfeeding, but have a lower rate of exclusive long-term breastfeeding (Johnson & Esposito, 2007).

Further, personal choices made by parents can also influence breastfeeding duration. Kronborg and Vaeth (2009) found that pacifier use was negatively related to extended exclusive breastfeeding duration; and, when coupled with inappropriate breastfeeding technique, early termination of breastfeeding increased. These findings were seen to occur even among women who had received breastfeeding education and technique correction. Breastfeeding education and technique demonstration has been shown to have a positive impact on breastfeeding success.

**Interview findings.** Nearly all participants perceived breastfeeding as the healthiest option for the baby, and most participants spontaneously mentioned long-term health benefits from breastfeeding. This is reflected in Beth's assessment of breast milk, "I know that they get so many of like the antibodies and everything, I mean, they get things that no matter how much they try to reproduce in formula,

*I had a friend that she was like, "Oh, just, you know, try to nurse for at least three months." You know, and so she talked with me and, and that's what helped me out...*

*~ Lucy*

they can't..." A mother's decision to initiate breastfeeding was largely dependent upon the behaviors and attitudes of her friends and family. Frequently, women sought out information about breastfeeding after they had already made the decision to breastfeed. For instance, Jessica shared, "I just, I knew from the time I got pregnant, [breastfeeding] was somethin' I wanted to try...and, I got lots of information from everybody." Participants indicated relying heavily on friends and family who had experience with breastfeeding for relevant information.

*My first [breastfeeding experience] was a disaster, 'cause I just couldn't get her to nurse...But, my others latched and I think it was so much easier with them.  
~ Arielle*

Within the group interviews, first time mothers frequently expressed feelings of low self-efficacy related to breastfeeding, expressed more concerns about their milk supply, and reported needing more support with breastfeeding techniques (i.e., positioning, latching, expressing) and problem solving. Though experienced mothers did report encountering the same problems and concerns with breastfeeding, first time mothers were more easily overwhelmed. "Especially for first time moms [breastfeeding is difficult] ... you're new at everything," Lilliana said, describing how overwhelming it was to try to breastfeed her first child. Experienced mothers portrayed more self-confidence caring for infants, and were more likely to focus on the rewarding aspects of breastfeeding, such as bonding. "I couldn't wait [to breastfeed], like with my pregnancy, you actually start to miss it... And, so that was one of the things I, when your baby is born, you're like, 'Oh, just give me my baby so I can nurse it,' and have ... that bond that you feel..." Alicia described how the bonding experience with her first child made her excited to share the same experience with her next child. Many participants indicated not breastfeeding their first child, or having breast fed their first child for a shorter duration, and having more success breastfeeding subsequent children.

Physical pain and discomfort were frequently identified as major barriers toward successful, long-term breastfeeding. A fatalistic view of pain and ineffective breastfeeding was often expressed. Pain related to breastfeeding tended to fall into three categories: 1) pain due to improper technique or latching, 2) pain due to engorgement, and 3) pain caused by pumping. Frustration with pumping was reported to increase when inferior breast pumps were used, in part because this increased the pain experienced, and because a longer period of time had to be devoted to pumping. "...it seemed like no sooner than I was done pumping, done feeding her, I had to pump again, and it would be almost time for her next, I mean, it was just like an endless cycle of pumping," Arielle remembered, sharing how only her dedication to providing her daughter with breast milk for its health benefits allowed her to persevere.

*... all the literature I read was like, "If [breastfeeding] hurts you're doing it wrong." ...but all the other mothers I've talked to, they're like, "That's a lie. It always hurts at first, you know, you've got to get used to it."*  
~ Agatha

Formula supplementation often started in the hospital, and was frequently initiated by nurses or physicians. Several women reported that as first time mothers they did not know that they could interject and stop formula feeding. Participants also indicated that they wanted *what was best for their babies* and if a physician recommended formula feeding, the recommendation was followed. Nicole shared her experience with her first child after delivery, "[Providers] were

*I kind of went in it with the attitude of, you know, "I'll try breastfeeding and if it works - it works, and if it doesn't - it doesn't."*  
~ Grace

like, 'You have no milk, you're gonna have a screaming kid for the next couple of hours, you need to do something,' and I didn't want him to starve." Other frequently reported reasons for supplementing were related to delays in milk production, inadequate supply, and concerns that the infant was not receiving enough nutrition. Women who encountered these barriers often viewed the need for formula feeding in very fatalistic terms.

*[Breastfeeding is] so tiring. Sometimes it was just exhausting. It takes a lot out of you.*  
~Mattie

Though many women reported that breastfeeding seemed easier than formula feeding, because it did not necessitate cleaning and preparing a bottle, the amount of time and commitment required to exclusively breastfeed was frequently reported as a major barrier. Participants indicated that the amount of time it took to breastfeed was draining and inhibited other necessary activities, such as caring for older children. Further, many women indicated that maintaining a schedule for breastfeeding was onerous; some women explicitly indicated resisting a lactation consultant's suggestion for a breastfeeding schedule.

Many women reported that they, or their infant, experienced health problems that created a barrier to breastfeeding. Maternal health behaviors – smoking, unhealthy diets, stress – were also identified as barriers to breastfeeding. Many women perceived that their diets had to be exceptionally healthy to breastfeed; as one participant noted, “One thing about formula feeding, though, you don’t have to watch what you eat.” Further, many women indicated that their milk supply was compromised due to the stress they were experiencing, often from other life events. Several women indicated that formula feeding was the superior feeding choice for infants when maternal health behaviors were poor. Lisa explained her decision to formula feed by saying, “I’m a very bad, uh, eater and I eat all of like, a lot of junk food.”

*...and I'm not makin' enough [breast milk], they [providers] said it's stress.*  
~Tiffany

**Conclusion.** Generally, women made the decision to breastfeed due to the known health benefits of breast milk. Their own negative health behaviors prevented women from breastfeeding, because they felt like formula would be a healthier option for their child. Similarly, women were willing to give their infants formula if health care providers indicated that it was in the best interest of their child. First time mothers reported that navigating problems with breastfeeding was overwhelming while trying to take care of a newborn for the first time, while more experienced mothers generally reported more breastfeeding success. Women perceived that health care providers and the literature were not forthcoming about the physical

pain and time demands involved with breastfeeding. Combined with the fatalistic tendencies of the population, women who struggled with these issues often accepted that breastfeeding was something they could not manage. Finally, women frequently mentioned milk supply concerns in a variety of contexts and found it hard to determine if an infant was receiving adequate nutrition from breastfeeding.

## Summary: Individual Level Factors Impacting Breastfeeding

### Key Cultural Points:

- Appalachian culture focuses on independence and self-reliance.
- Appalachian cultural values are centered around love of place and family.
- One key characteristic of both Appalachian culture and the culture of poverty is fatalism; accepting the way events unfold.
- Poor health behaviors are common place in Appalachia as a result of poverty.
- The culture of poverty stresses focusing on the present; many women in this region find it hard to appropriately weight long-term advantages and struggle with long-term planning.
- Communication within the culture of poverty is often done through informal storytelling, rather than direct, formal communication.

### Recommendations:

- Educational materials need to be presented in narrative form (i.e., tell a story) and be easy to read. Stories that emphasize *place* (i.e., mentioning a specific county, city, or town) are particularly important for Appalachian women.
- Encourage providers to bring up feeding options early, stress the health benefits of breastfeeding, and recommend that women talk about feeding options with friends and family.
- Educational materials must encourage women to persist; offering reassurance that difficulties do occur with breastfeeding and they can be resolved is very important.
- Educational materials should include the following content:
  - a realistic portrayal of the time commitment associated with breastfeeding;
  - why long-term planning needs, such as building up a supply of stored breast milk, is advantageous for mother and baby;
  - the problems – technique, latching, pain – women are likely to experience as well as problem solving strategies to overcome these issues;
  - the concerns women may have regarding milk supply;
  - the concerns women may have over their own behaviors – poor diet, smoking, stress – and how that relates to breastfeeding.

## **Interpersonal Level Factors Impacting Breastfeeding**

The social-ecological model identifies interpersonal factors as an individual's social networks and support systems, such as family, friends and work groups. The opinions and support of the people who surround an individual everyday can influence the behavior and the attitude of the individual. Friends and family can make breastfeeding easier by providing emotional support and relevant personal experiences or make it more difficult by expressing displeasure or behaving in ways that counter breastfeeding success.

**Literature review.** Many mothers return to work within the first year of their child's life, and this transition can increase the barriers related to continuing to breastfeed their infant (Johnson & Eposito, 2007; Rojjanasrit & Sousa, 2010). Mothers returning to work must discuss their breastfeeding needs (e.g., private place to pump, scheduling needs, etc.) with their supervisors (Johnson & Eposito, 2007). Further, these same needs may need to be discussed with co-workers (Johnson & Eposito, 2007; Rojjanasrit & Sousa, 2010). There is also the possibility that co-workers may resent the more frequent breaks a breastfeeding mother may need to take (Rojjanasrit & Sousa, 2010). The potential social embarrassment that working mothers face when disclosing personal information, in addition to the difficulties of expressing milk at the workplace, can negatively impact a woman's commitment to exclusive long-term breastfeeding.

Though an individual's work situation has been found to have one of the strongest influences on long term breastfeeding (Johnson & Eposito, 2007), a number of other factors have a stronger influence on a woman's decision to initiate breastfeeding. Family and friends can influence a woman's likelihood of breastfeeding, not only by the choices they have made when feeding their own infants, but also through encouragement and social support (Goksen, 2002; Witters-Green, 2003). Also, for infants born without complications, the greatest source of breastfeeding information comes from family and friends (Purdy, 2010). Given the low breastfeeding rates in southeastern Ohio, one could deduce that family and friends would not be able to give advice on breastfeeding if a mother chose to breastfeed.

Additionally, the attitudes held by family about breastfeeding have a strong impact on a woman's feeding decision. Research has found that both partners/spouses and the baby's maternal grandmother can positively or negatively influence breastfeeding (Bentley et al., 2003;

Moore & Coty, 2006). Research has also found that even extended family, such as grandparents, can impact the decision to breastfeed (Bentley, et al., 2003). The individual with the most power in the home has been shown to have the most influence over this behavior. Who has the most power in a home may be determined by social and cultural factors specific to a geographic area or an ethnic group. A study of low income, rural women found that the father of the child had the most influence over breastfeeding decisions in one eastern U.S. state (Schmidt & Sigman-Grant, 2000). This finding was replicated in a different population (Bentley et al., 2003); however, not all partners have strong attitudes about feeding decisions.

Studies have shown that by the time a woman is ready to give birth, she has likely decided on the feeding method she will employ (Shannon, O'Donnell, & Skinner, 2007). Because health providers have the ability to make a positive impact on a woman's likelihood of breastfeeding (Shannon, O'Donnell, & Skinner, 2007; Witters-Green, 2003), it is strongly recommended that health providers discuss the benefits of breastfeeding with expecting mothers during prenatal visits. However, in rural areas, where health providers are few and far between, expecting mothers may not have access to these types of conversations. In addition, too often providers fail to explicitly endorse breastfeeding (Witters-Green, 2003) or address breastfeeding as a lifestyle choice rather than promoting it as a healthier option (Moore & Coty, 2006). Additionally, not all health care providers have enough knowledge about breastfeeding to inform or help women who are encountering difficulties (Witters-Green, 2003). Physicians should make sure they have current information about breastfeeding, address feeding concerns, and educate women about the benefits of breastfeeding at prenatal visits; women should also be given contact information for community support groups at this time (Shannon et al., 2007). This will provide women time to consider, prepare, and learn about feeding options.

Directly after birth, health care providers, such as lactation consultants, can do a number of things to improve initial breastfeeding success: encouraging skin-to-skin contact to increase successful bonding (Moore, Anderson, & Bergman 2009; Shannon et al., 2007); providing support on positioning and successful latching; sitting with the mother through at least one successful feeding session; encouraging the mother to break contact and re-create a latch to reduce nipple pain and decrease negative breastfeeding experience; and teaching mothers to recognize infant cues to switch breasts (Shannon et al., 2007). Lactation consultants can also

*Well, me and my mom are really close and she, she fed all three of us, so her influence of, "That's what I did. You should at least give it a try." It was more of a push, and I knew she was there that if I did have trouble with it, she was there to call and say, "Hey, you know, this, this isn't working, what should I try?"*

*~ Nicole*

help women with more specific breastfeeding difficulties, such as showing women with inverted nipples how to make their nipples more accessible to infants. Not only do these actions help ease breastfeeding difficulties, but they also serve as a cue to mothers that health care providers think that breastfeeding is important and worth mastering. Health care providers should make possible feeding difficulties and potential issues clear to parents prior to hospital discharge. This is especially important for near-term infants, who often look mature but may have less developed organ development and regulatory abilities which can make breastfeeding more difficult. Finally, it is very important that health care providers stress the need for follow-up visits with their pediatrician and/or lactation consultants to guarantee optimal infant health and breastfeeding success (Shannon et al., 2007).

**Interview findings.** The most important interpersonal factor facilitating successful breastfeeding was the support of family and friends. Many women spontaneously identified the support of a family member, especially one with breastfeeding experience, as a key factor in breastfeeding persistence. Family and friends with previous breastfeeding experience were often identified by participants as the primary sources of breastfeeding information and problem-solving. For many women, assistance from unknown lactation consultants was perceived as intrusive or too forward (e.g., touching the woman's breast, grabbing the infant, etc.).

The biggest interpersonal barrier to breastfeeding was negative opinions held by family and friends. Frequently, participants reported opposition from the baby's grandmother – typically one who had not breastfed; disapproval from the paternal grandmother seemed to carry

*I mean, my mother-in-law thought it was like huge ordeal, which she didn't breastfeed my husband or his sister, and she didn't think I should have breastfed any of my kids.*

*~ Marjorie*

more weight than disapproval from the maternal grandmother. Another cause of conflict occurred when the baby's father had children with a previous partner and those children were formula fed; participants generally believed that their decisions to breastfeed were being interpreted by their partners as disapproval for the way their partners' children from a previous relationship were fed. Other participants indicated that negative reactions were limited to the duration of breastfeeding – specifically that others were uncomfortable with a child being breastfed *too long*. Though negative opinions did not seem to prevent women from doing

*[Providers] talked to you...ensure you that [breastfeeding] is much better...just them talkin' to me and lettin' me... have a decision, but I was like, "Well, you know, I'll just go ahead and listen to 'em and try it out."*  
~ Sally

*[my husband] felt like he didn't, he didn't get to bond with her because he never really got to feed her...until I started pumping.*  
~ Rose

what they thought was best for their infants, several women expressed being troubled that their decisions were met with disapproval by their family members; "...you get pulled in several different directions," Sue said, describing how she felt about her decision to breastfeed when her family openly opposed it.

Many women reported that family members encouraged formula feeding because they wanted to take part in feeding the baby. Caitlyn reported: "I remember telling my mother-in-law that I was gonna breastfeed, and she told me that she was upset because she wanted to be able to give the baby a bottle." Some women indicated circumventing this issue by pumping breast milk to provide family members an opportunity to take part in the feeding experience. Others reported that family members had tried to feed formula to their babies against their wishes. Though participants always indicated that family members suggested formula feeding in an effort to take part in the feeding experience, the context of some of these reports suggest that family members may have been trying to relieve the mother because breastfeeding was perceived as burdensome.

Health care providers who encouraged breastfeeding before the child was born by discussing the health benefits facilitated breastfeeding initiation. Importantly, providers who did

not try to force the decision, but rather discussed the benefits of breastfeeding, had the most positive impact. Women who felt pressured by health care providers reacted negatively toward breastfeeding.

**Conclusion.** The opinions of family and friends are important to the women in this region. Women reported feeling good about the support that they received and bad when they encountered disapproval. This was also true for women who chose to formula feed. Interestingly, the opinions of particular family members (i.e., the baby's father and paternal grandmother) were perceived to carry more weight. Though women indicated wanting to avoid disapproval from those closest to them, they also indicated a willingness to hold firm to their own decisions. The vast majority of participants indicated resisting pressure from others, including health providers.

## Summary: Interpersonal Level Factors Impacting Breastfeeding

### Key Cultural Points:

- Appalachians want to maintain positive relationships with friends and family members.
- Appalachian culture focuses on independence and self-reliance.
- In the culture of poverty, individuals tend to be very sensitive to others talking to them in a parent voice, or *talking down* to them.
- Communication within the culture of poverty is often done through informal storytelling, rather than direct, formal communication.

### Recommendations:

- Provide suggestions on how to react to negative opinions about breastfeeding while still maintaining a positive relationship with naysayers. This could be done in narrative form – by providing vignettes which illustrate tools that women can use when in such situations.
- Provide information on pumping, including the different types of breast pumps, and how pumping milk can be used as a way to share the feeding experience with family.
- Encourage providers to bring up feeding options early; stressing the health benefits of breastfeeding for both mother and baby. The information must be presented in a balanced way (i.e., provides information about both breast and formula feeding) that facilitates informed choice.

## **Organizational Level Factors Impacting Breastfeeding**

The social-ecological framework identifies organizational factors as agencies within the health care system that influence an individual's decision to breastfeed. Health care systems, health care plans, local health departments, and health clinics represent potential sources of organizational messages and support for breastfeeding. Individuals working within these organizations, specifically physicians (viz., obstetrician - gynecologists, family practitioners, and pediatricians), nurses, midwives, and lactation consultants, are well positioned to support – or undermine – a woman's choice to breastfeed.

**Literature review.** Initiation of breastfeeding and the experiences women have in the hospital directly after birth have a critical impact on breastfeeding success (CDC, 2011). Several routine hospital practices have a negative impact on breastfeeding outcomes. Women have reported that nurses have given their newborn infants formula against their wishes (Witters-Green, 2003). Formula supplementation is such a common occurrence, that the Healthy People 2020 goals – put in place by the U.S. Department of Health and Human Services – included an objective to “reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life” to 14.2% (HHS, Healthy People 2020, 2011). Another routine hospital procedure that negatively impacts breastfeeding success is the practice of separating mother and infant, which has been identified as one of the major barriers to successful breastfeeding (Moore et al., 2009). Breastfeeding has been shown to be more frequent and for longer intervals when the mother and child are kept together, and it also decreases the likelihood of formula supplementation (Shannon et al., 2007). Increased skin-to-skin contact can also positively influence a mother's understanding of her infant's cues, which will aid in breastfeeding.

Other suggested changes to hospital practice immediately after birth include: not dressing the infant to increase skin-to-skin contact, leaving the infant on the mother's chest for the first hour – delaying vitamin K and eye ointment administration – to increase maternal bonding and skin-to-skin contact, and performing bathing and physical assessment in the room with the parent(s) and using this time to educate parents (Shannon et al., 2007). Skin-to-skin contact has been shown to reduce maternal anxiety and increase confidence for childcare, which positively influences breastfeeding (Moore et al., 2009).

Proper care and coaching greatly improves breastfeeding success, and a Healthy People 2020 goal has been added to try and “increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies” to 8.1%, which would be an increase from the 2.9% baseline in 2007 (HHS, Healthy People 2020, 2011). Based on a national survey of obstetric hospitals and birthing centers, most hospitals do have breastfeeding policies in place, such as providing prenatal breastfeeding education to hospital staff (93%) and teaching breastfeeding techniques to new mothers (89%), but a much smaller percentage of hospitals have policies that meet international recommendations (14%) (CDC, 2011). This same study found tradeoffs in breastfeeding policies between large and small hospitals: large hospitals tended to have better breastfeeding policies but had some of the lowest prevalence of following several recommended practices, especially not supplementing with formula; small hospitals tended to have lower rates of staff training and competency testing, but were less likely to supplement with formula or separate mothers from their infants. Smaller hospitals were also more likely to provide discharge care.

Regional differences in policy and practices related to breastfeeding were found among hospitals (CDC, 2011). The Northeast tended to have the highest positive care practices, such as staff competency assessments and post discharge support. The Western region had the highest rates of limiting supplements and rooming in. Both of these regions have been shown to have high rates of long-term breastfeeding (CDC, 2010).

**Interview findings.** Many women reported that hospital staff were ambivalent about breastfeeding. While they did not suggest that hospitals discouraged breastfeeding in any way, the mothers reported that they did not feel encouraged to breastfeed. This was especially true for women who delivered at hospitals that did not have a lactation consultant on staff. As Ashley explains, “They didn’t actually have a breastfeeding consultant in the hospital. So, they had a nurse come in and tell me what she knew about it - showed me how to work a hand pump, and that was it.”

Upon reflection, women expressed that they wished that the hospital staff would have encouraged them more to consider breastfeeding. Many women reported that they had not made a decision about how they were going to feed their babies prior to coming to the hospital to deliver; these women believed that having a conversation about feeding choices while in the

hospital would have been helpful. Ashlee noted, “And, then when I delivered her ... [at a hospital] that’s known for delivering babies, and they never brought breastfeeding to my attention...” Women who were left to learn how to breastfeed on their own were less likely to persist. Many women stressed the importance of having early intervention and assistance when choosing to breastfeed. Lily, who delivered her baby in a hospital with a lactation consultant, did not get timely breastfeeding support: “I know when I first had him, the lactation specialist at the hospital didn’t see me until half an hour before I left the hospital. And, I was there for four days, and ... not that I didn’t know what to do or what to expect, but sometimes you just wish there was somebody right there to advise you, ‘Do it this way, or not.’ You know, the positioning, I know, helps with the pain of the nipple and all that, but I wish there would have been somebody right there quicker than on the fourth day, [when I was] ready to leave.”

*I probably would have  
stuck with ...  
breastfeeding if I was  
taught, if I was taught  
how, and if you just, just  
try and do it one time,  
it's, I don't, you know,  
you're on medications,  
after you had a baby, you  
don't really know what's  
goin' on. So, I think if I  
had somebody come in  
there maybe the next day  
or somethin' and tried to  
show me ... I probably  
would have stuck with it.*  
~ Tiffany

Some women did express that the action – or inaction – of the hospital staff members was unsupportive of breastfeeding. Women reported that they were not given the choice to breastfeed. Bobbie Suzie lamented, “ ... I was really upset that [the hospital staff] didn’t even ask, they just automatically just put the bottle in his mouth, and I didn’t know to say, “Hey! Can I try [breastfeeding] first?” until way after the fact. So, I mean, I think maybe [providers] should have a little education, too ... they knew that I was a new mother, they knew that ... I’d never had a pregnancy, and they should have said, ‘Hey, you know, what would you like to do?’” Other women reported that actions by hospital staff made it more difficult for them to breastfeed. Shasta shared, “... the other thing was whenever they got it through that I wanted to breastfeed, at night, you know, I’d say, ‘Could you bring her back in so, for her feeding, or his feeding?’ And, they would just bring him back in and leave him in there, clear across the room. And, I couldn’t get up ‘cause I was cut! And, it hurt! So, I had a hard time with that.” Finally, there were women who described situations in which they felt completely

unsupported in their decision to breastfeed while they were in the hospital. Ally, who had a premature baby, tells the story of her baby's homecoming day like this: "They took my child to do the stress test and the car seat test, so I didn't see my child for a good five/six hours so I couldn't breastfeed. Well, when she finally brought my son back, and I tried to get him to latch on, he wouldn't do it, but she was hovering. She would not leave the room, I asked her nicely, she wanted to watch. I said, 'That's fine.' She turned around and said, 'Well, if you can't get your baby to feed, he's gonna end up back in here and we'll take care of him.' I said, 'Lady, I will get my baby to feed, just get out of my room. This is what I want.' But, I mean, it, it was hard at first because I didn't have the support until after I left the hospital."

Lactation consultants were identified as a key support for breastfeeding mothers. Women

*I think if I would have had [name] as, my lactation consultant with my other kids, I probably would have been able to breastfeed all of 'em. ... she called and checked on me like once a week when we first came home. Uh, she met with me two or three different times...*

*~ Marjorie*

who initiated breastfeeding consistently expressed the importance of the lactation consultant during the early breastfeeding experience. Women who had positive experiences with their lactation consultants described a special connection with them; many continued the consulting relationship after discharge from the hospital. That continued relationship and support appeared to be a key factor in breastfeeding persistence. Jasper credited her breastfeeding success to her lactation consultant, "... the lactation consultant, absolutely amazing. And, they, they will give you like their personal phone numbers, you can call them at two o'clock in the morning, like crying your eyes out..." This type of 24/7 support was very reassuring to many women; even if they never had to call their lactation

consultants, they knew they could at any time. This seemed to give them more confidence in choosing to breastfeed.

Lactation consultants were also perceived as problem-solvers. Women who had the support of a lactation consultant were more likely to address problem situations rather than accept that formula feeding was inevitable. Gloria attributed her breastfeeding success to a team of women who were able to provide early intervention: "... after I gave birth, I remember

*But, I have to tell you that the lactation specialist that I had at the hospital was wonderful. And, she just, she was there for me. She tried everything she could. I went back to see her later to try and do more things. ... I'll tell you what, I would refer anyone to that woman. She was awesome. She just did everything she could for me.*

*~ Lora*

feeling very like overwhelmed, and confused, and tired, and there was, the midwife ... and the nurses ..., and they helped her latch on. It's like she knew what to do before I did. Uh, they just kind of guided the baby to the nipple, and they helped me figure out how to hold her. And, then the next day, one of the nurses came, she was a lactation consultant, and she helped me figure out some different positioning. But, I could not, I don't think I could have figured it out if I didn't have those other women kind of directing me. Uh, so I think it's really key to have a lactation consultant on staff in the hospital.”

To be effective, a lactation consultant had to make a personal connection with a breastfeeding mother. For the breastfeeding mothers in the study, it was not enough for the lactation consultant to have the content knowledge and expertise; they had to feel like the consultant cared about them and their babies. When asked about her lactation

consultant, Rose recalls: “She was uh, she was really nice. ... she was really very helpful and I had ... to call her a couple of times, and she talked to me on the phone, and actually, called the doctor [for me] once ‘cause I was having problems ... I think she went above and beyond, ... but I breastfed.”

Women who did not have that personal connection with their lactation consultants struggled more with their breastfeeding experiences. A primary source of disconnect between a mother and a lactation consultant occurred when a lactation consultant used the parent voice, or talked down to a mother. Brianna summed up her experience with a lactation consultant like this: “I think she made me feel stupid.” Those who were recalling their experiences as a

*Yeah, they don't show you enough. They show you one time and then just get aggravated it seems like. ... the lady showed me like one time how to do it, and I guess I did it wrong and she kind of got aggravated. I don't think that [she] was patient.*

*~ Tiffany*

first-time mother stressed how important it was for lactation consultants to develop a positive rapport and be patient as they learned to breastfeed. Women also felt very uncomfortable with lactation consultants who touched their breasts without first developing a good working relationship.

First-time mothers were sensitive to lactation consultants who presented too much information at once. Many mothers described this type of consultation as *information overload* and thought that lactation consultants would have been more effective if they were a little more compassionate toward first-time mothers. While Grace was determined to breastfeed and persisted with breastfeeding, her first experience with a lactation consultant was described as stressful: “The lactation consultant was way too overwhelming for just having a baby. I mean, it was an hour and half long, and it was just info, info, info, info, and granted, I had chosen to breastfeed, so it was good information. But, it was so overwhelming that had I been on the border, I probably would have said, ‘I don’t want to do this. It’s too much.’”

Women who used a midwife for their obstetric care consistently reported receiving information about breastfeeding throughout their pregnancies. They also felt supported by their midwives after their babies were born. Gloria recalls: “I saw ... a midwife and she really encouraged me to breastfeed. And ... provided a lot of support after the birth...” This is in contrast to how women who used a physician for obstetric care. While some women indicated their obstetricians encouraged breastfeeding, most women reported that their physicians did not open the conversation about the subject.

Overwhelmingly, women reported that they never had a conversation with their obstetrician about breastfeeding. Many women responded the same as Mandy: “Neither time did mine ever like even talk about [breastfeeding]. And, I had two different providers for both

*Yeah, and I think that's the big issue is, you know, [doctors] are trained to deliver your baby, take care of your baby, or you know? To me, breastfeeding goes along with that. I think they should have, you know, more knowledge of, you know, what's going on instead of you having ... to go somewhere else to get your information.*

*~Sue*

pregnancies. Uh, neither of mine did, any of ‘em ask, ‘What are you [going to do]?’” Despite this fact, many women expressed a desire to have a conversation with their physicians about breastfeeding. Women believed that their physicians should be their primary information source for breastfeeding. Lilliana wished that her obstetrician would have spent more time talking with her about breastfeeding: “And, if my doctor would have been more informative of it and like to help me on like, like questions, ‘cause I have a lot of questions, then I think I would have, it would have been a little easier and more comfortable.” Women believed that their obstetricians should have not only talked to them about breastfeeding but also encouraged it. Kaitlyn’s comment captured many women’s belief that physicians’ failure to have a conversation about

*I think the pediatricians,  
when I had my baby,  
suggested that but then  
my [baby’s] doctor, [he]  
always encouraged it.  
That’s probably the best  
advice, you know, comin’  
right from the doctors  
themselves.*

*~ Karlee*

breastfeeding has a negative impact on breastfeeding, “I think they probably actually influence you more ‘cause they don’t even ask you about breastfeeding.”

The handful of women who did received breastfeeding information and support from their obstetricians believed it influenced their decisions to breastfeed. Renée’s team of physicians “... supported [breastfeeding] 100 percent. The whole [group], there’s six doctors down .... at the clinic ... and everyone of ‘em support breastfeeding.” Although Jessica did not persist with breastfeeding, she appreciated that her physician took an interest in her decision to discontinue, “Mine was mad that I switched. He was mad that I stopped breastfeeding and went to formula. But, for my own health, I just couldn’t do it.”

Generally speaking, more women felt more supported in their decisions to breastfeed from the pediatrician than their obstetricians. However, it is important to note that the vast majority still perceived that the pediatricians did not broach the topic of breastfeeding except to ask what the baby was getting for nourishment. Most women perceived that their pediatricians did not have an opinion either way regarding breastfeeding. This is evident in Sue’s interactions with her baby’s pediatrician: “Yeah, ‘cause I told him I was breastfeeding ... at the first week check up that they have. Uh, and he said, ‘Okay, great.’ And, then by the time I had come back,

*... even at the hospital,  
when [the pediatrician]  
came, ... it was like, "Well,  
how is she fed?" And then,  
I was like, "Breast,  
breastfeeding," and  
they're like, "Well, I'm so  
glad you're doing this, but  
... I need you to  
supplement a little bit,  
but that doesn't mean  
nothing ... you get right  
back on the bandwagon  
as soon as you can." So, I  
did breastfeed ... [at her]  
check up, [the  
pediatrician] was like ...  
"Are you still  
breastfeeding?" She's  
very, very pro  
breastfeeding.  
~Kalie*

you know, my supply had already went, came down ... I had told him I had to start supplementing, he says, 'Okay, fine.'" This experience with a pediatrician's ambivalence toward breastfeeding resonated with many women.

Women who perceived that their pediatricians were consistently encouraging breastfeeding received motivation to persist with breastfeeding, tools to address breastfeeding problems, and support for breastfeeding even when supplementation with formula was medically indicated. Andrea perceived that her baby's pediatrician was one of her biggest supporters, "... he really encouraged me, he said, 'Keep breastfeeding. Keep breastfeeding. Keep breastfeeding.' Every time I'd go in there, he'd even ask me ... 'Are you still breastfeeding?' I was like, 'Yes.' He goes, 'Keep it up 'cause I'd like to see you do it for six more months.' And, I was like, 'Okay.'" Other women reported that pediatricians were instrumental in the discovery of their children's food intolerances or allergies. Women perceived that the pediatricians were helpful in suggesting food diaries and other tools to help solve the problem rather than immediately switching their babies to formula. Women who had to supplement with formula for medically indicated reasons appreciated it when their babies' pediatricians respected their decision to breastfeed and encouraged them

to continue to breastfeed while supplementing with formula. When a pediatrician presented supplementing with formula as a temporary situation, mothers were more likely to persist with breastfeeding.

Many women reported that they had received formula in gift packages from the hospital, their obstetricians, and their babies' pediatricians. This sent a mixed message to many women and they wondered why they were being given formula when breastfeeding was supposed to be

the best choice. Ashley, who received a Similac starter kit in her first trimester, shared her thoughts: "... if Similac's willing to give out samples that quick, why can't we give out breastfeeding samples that quick?" Many breastfeeding mothers reported being given formula samples upon discharge from the hospital. Paisley, a mother who initiated breastfeeding in the hospital, paradoxically describes how fortunate she was to receive formula in the hospital: "...my nurses, in the hospital, I don't know, they just absolutely loved me because I ended comin' home with ... 64 little bottles. I know nurses aren't supposed to do that, but they loaded me up, every single nurse on each shift, 'cause I had to stay there five days ... a nurse on each shift would give ... the little backpacks you get with ... one set of bottles, they would all fill it full and give me two and three each shift."

*And, whenever I went home, they sent me home with a breastfeeding bag, and it had bottles of formula in it. So, it was like saying, you know, "Just feed your baby formula."  
~ Anne*

**Conclusion.** The theme throughout the organizational-level factors influencing Appalachian women was ambivalence. While most women were not discouraged from breastfeeding, most were not highly encouraged to breastfeed their babies either. Most women reported that hospital staff either assumed that they were going to formula feed or simply asked the question *breast or formula?* There was very little dialogue about feeding choices or encouragement to breastfeed during the hospital stay. The hospital experience was very similar to how obstetricians approached the issue – they either did not open the conversation about breastfeeding with women or simply asked the question *breast or formula?* Pediatricians seemed to take more interest in encouraging breastfeeding among mothers who were already doing so than obstetricians, but this was not consistently true. An important finding from this study is that women want to have conversations with hospital personnel, obstetricians, and pediatricians about breastfeeding. Most women reported regret that they did not get more information from their health care providers about breastfeeding and thought that it might have influenced their decisions if they had more discourse about their feeding choices.

Women who utilized a midwife as a provider were more likely to report that they initiated and persisted with breastfeeding. This was also true for women whose obstetricians had

purposeful and meaningful discussions with them about breastfeeding. Pediatrician support was instrumental in breastfeeding persistence, especially when problems related to the baby presented. Early support from a lactation consultant also encouraged breastfeeding initiation. Lactation consultants who were able to make a personal connection with breastfeeding mothers and provide support after hospital discharge were more likely to positively influence breastfeeding persistence. Women really appreciated the lactation consultants that were willing to provide assistance 24/7; while most women reported they did not call during off-hours, women found it reassuring to know that help was only a telephone call away.

The distribution of formula gift packages had a negative influence on breastfeeding persistence. This phenomenon fit with the overall ambivalence many women reported experiencing across health care agencies, as formula gift packages were given to breastfeeding mothers as well as formula feeding mothers; positioning formula as the *safety net* for breastfeeding mothers.

## Summary: Organizational Level Factors Impacting Breastfeeding

### Key Cultural Points:

- Appalachian culture focuses on independence and self-reliance.
- The culture of poverty stresses focusing on the present; many women in this region will have difficulty with long-term planning.
- In the culture of poverty, individuals tend to be very sensitive to others talking to them in a parent voice, or *talking down* to them.
- In Appalachian culture, personality tends to be more important than other individual characteristics, including degrees and educational expertise that a person claims to hold.
- One key characteristic of both Appalachian culture and the culture of poverty is fatalism; accepting the way events unfold.

### Recommendations:

- Health care providers should initiate many conversations about breastfeeding with Appalachian mothers. Women want to make their own decision, but will likely need to hear the information several times before they make a decision.
- Labor and delivery hospital staff should not assume that Appalachian women and women in poverty have made a decision regarding feeding choice prior to coming to the hospital. Long-term planning is not a characteristic of these cultures, so education and discourse about breastfeeding around the time of birth is appropriate.
- Lactation consultants and those supporting a breastfeeding mother should be aware of that it is just as important to make a personal connection with Appalachian women as it is to provide them with information. Because long-term planning is not a characteristic of women in the region, having 24/7 support available is reassuring.
- Ambivalence by health care providers as well as supplying formula gift packages reinforces fatalistic beliefs about breastfeeding.

## **Community Level Factors Impacting Breastfeeding**

Within the social-ecological model, community-level factors are based on community and social environments in which an individual has experiences and relationships such as neighborhoods and places where individuals frequently visit (e.g., restaurants, stores, etc.). For example, a perceived lack of support for breastfeeding in a community can send a message that breastfeeding in public is an inappropriate behavior and may deter women from initiating breastfeeding. Conversely, a community which embraces and supports breastfeeding mothers can positively influence women to not only initiate breastfeeding, but also to persist.

**Literature review.** Women are often unaware of the breastfeeding support available to them in their community (Witters-Green, 2003). This can include breastfeeding support groups and lactation consultants. Encouraging women to seek out other women who are or who have breastfed can be an important form of social support and breastfeeding knowledge (Shannon et al., 2007). This is especially true in cultures like Appalachia that highly value personal relationships. Finding community support for breastfeeding can help a woman maintain a positive view of breastfeeding, which can help counter negative social views she may encounter.

How the community portrays breastfeeding influences how willing a woman is to breastfeed in public (Moore & Coty, 2006; Shannon et al., 2007). Differences have consistently been found between regions in the United States and the frequency and duration of breastfeeding (Ruowei et al., 2008; Ryan et al., 2002; CDC, 2010). The Southern and Midwestern regions of the United States have historically lower breastfeeding rates and shorter breastfeeding durations than other regions in the United States; whereas the Pacific and Mountain regions in the United States have the highest rates of breastfeeding.

It has only been in recent human history that breastfeeding knowledge, techniques, and problem solving solutions have stopped being passed along by friends and family members (Shannon et al., 2007). The sexualization of breasts in the media has influenced normative beliefs in the U.S., which influence women to feel embarrassed by breastfeeding their infants in public. The media, an omnipresent influence on cultural and societal norms, impacts individual beliefs and attitudes, and largely depicts formula feeding as “normal” (Bently et al., 2003). The

U.S. media sexualizes breasts, which contributes to the embarrassment many women feel toward breastfeeding (Bentley et al., 2003; Purdy, 2010; Shannon et al., 2007).

**Interview findings.** Interviews with women revealed a mixed perception of community support for breastfeeding in general. Some women experienced support from their communities, and some did not. Additionally, some women acknowledged they experienced both support and opposition from their communities in their decisions to breastfeed. Many women reported the perception that their communities have become more supportive of breastfeeding over time. This was evidenced by women expressed the belief that communities have become more progressive in their attitudes regarding breastfeeding during the time that elapse from their first babies to the present.

Women who perceived they were supported by their communities in their choice to breastfeed often experienced more support from older generations than similar age peers. Belle, a young mother, describes her experience: "...[if] I'm around a younger crowd, they seem to be more like, 'Oh my gosh, what are you doing?' But, my husband's a member of the lodge, and they were having ... an Easter observance service ... I was feeding him and had the cover on, and he was eating, and he so loud sucking that everybody looked, but it was a lot older crowd ... we were the youngest people there, but ... afterwards, ... everybody came up and was like, 'That was so cute listening to him eat.' So, ... it made me feel good that they respected that I was feeding him." Given that women generally perceived that communities are becoming more supportive of breastfeeding over time as well as the feedback that older generations are more supportive of breastfeeding, it seems as if there has been a gap in community support for breastfeeding in Appalachia.

*... I see it's progressing, actually. You didn't hardly hear anyone, everyone I talked to when I had my first kid, they're like, "You're wantin' to [breastfeed]?" And, I'm like, "Yeah, I want to." And, they're like, "Well, no one does that." You know? I think it's something you actually see more of now, I mean [in contrast with], 12 years ago, 11 years ago ...*

*~Mo*

How women defined *community* also determined their perception of support for breastfeeding in the community. Women who tended to have a more limited or defined view of

*And, also, I feel like a lot of my friends breastfeed. There's a lot of peer pressure, I think, to breastfeed uh, in the crowd that I hang with. So, I felt like I got a lot of support from my close circle of friends.*  
~ Gloria

community, such as their immediate circle of friends and family, generally felt more support. Those who had a more expanded view of community tended to factor in the perceptions of others in their communities in a broader context; as such, they tended to feel less support.

Women also felt that their communities did not support breastfeeding. Many women were of the opinion that they were marginalized because they chose to breastfeed their babies. The lack of support they experienced was manifested in both verbal feedback and nonverbal cues from others in their community. This is described in Caitlin's story: "I think [breastfeeding] is looked down upon. I mean,

if you tell someone that you need to go pump or go feed your baby, it's like they give you a weird look as if, 'You actually breastfeed?' And, so it's, it's awkward sometimes...".

Women frequently assessed community perceptions of breastfeeding through attitudes relating to breastfeeding in public. As with support for breastfeeding in a general sense, women reported a mixed perception of community support for breastfeeding. Some mothers reported that they breastfeed in public frequently and have never had any reaction – positive or negative – from a bystander. Others had experienced or reported that friends or family members experienced negative reactions from people in their communities regarding breastfeeding in public. A few women indicated that they had received support from other women when they were breastfeeding in public.

Interestingly, women often discussed breastfeeding in public in terms of whether or not they would be scared or afraid to do so. Women generally gravitated toward two categories: those who were comfortable breastfeeding in public and those who took measures (e.g., pumping breast milk, scheduling outings around feedings, etc.) to avoid breastfeeding in public. Ashley describes her reluctance to

*I go everywhere. It doesn't matter ... I'd walk through Wal-Mart with a blanket over my shoulder ... I have never had a negative experience, ever.*  
~ T.J.

breastfeed in public: “It’s the fear of doing it in public. What people’s gonna say or how they’re gonna react. And, I don’t know.” This narrative is in contrast to Kelly’s thoughts on breastfeeding in public: “I’m not scared to [breastfeed] in public either. ... when he’s cryin’, he’s hungry, I feed him. I have a cover up, obviously, but ... I’ve done it lots of places - restaurants ...yeah, lots of places, and I haven’t really had anybody that [objected].”

The women who perceived that breastfeeding in public was not accepted in their community often hypothesized that it was due to the lack of education. As Cinderella explained, “I don’t think [people in my community] are really educated about ... breastfeedin’ out in public, they [think], ‘that’s gross’, or you can hear the whispers behind you, it’s not the norm for here. Like somewhere else, it might be [accepted]; but not here.” Women reported two types of negative experiences with breastfeeding in public: overt and covert objection from bystanders. The incidents of covert objection (i.e., eye-rolling, whispering, head shaking) seemed to be more frequent than overt objection (i.e., direct comments toward the breastfeeding mother).

Women perceived that people in the community believed that women should breastfeed in the bathroom when they were in public places. Several women recounted stories of overt objection similar to Jessica’s: “I had a cousin, one time, and she was in public feeding the baby, sitting on a bench, completely covered up, and this lady come up and she goes, ... ‘Why, are you, you know, why are you doin’ that out here? ... Why don’t you go to the bathroom?’ And, [my cousin] said, ‘Would you go and eat your lunch on the toilet?’”

A few women brought up the issue of society’s sexualization of breasts. Women mentioned this issue in three contexts. First, women reported difficulty imagining their own breasts being used for breastfeeding. Paisley had initial reservations regarding breastfeeding that quickly resolved when her baby began to nurse: “...it was completely different from what I had

*...People think that mothers should [breastfed] but not in public. They don’t want to see ... I was in the airport ... I had to breastfeed, and a lady behind me ... she didn’t say anything to me, but she was right behind me talkin’ to her husband about “This is a public place. Just, you don’t do things like that in public.”*  
~ Shanée

*... [my partner is] protective, like he doesn't want someone to actually [see], even though she's eating, that's beside the point. It's someone seeing my boob.  
~ Brianna*

expected because I was thinkin' about that whole sexual thing, and I'm thinkin', 'Oh, gosh. I'm not gonna be able to do this.' But, then it was, it was completely different. It was not the same at all, and it was just like, 'Oh, I am so in love', you know ... it was amazing." Other women discussed society's sexualization of human breasts as an issue that some women consider when making the decision to breastfeed. The third issue related to the sexualization of human breasts that was reported by women was concern from their partners regarding other people seeing their

breasts while they were breastfeeding.

**Conclusion.** Generally speaking, women reported mixed feelings regarding community support for breastfeeding in general. While women have experienced negative reactions to breastfeeding, most women report that their communities have become more accepting over time. Women also report that, among members of the broader community, older generations offer them more support for breastfeeding than their similar age peers. Negative reaction – either covert or overt objection – to breastfeeding in public remains a very real issue that breastfeeding mothers face. Finally, the sexualization of women's breasts is a community-level factor that influences breastfeeding on many levels.

## Summary: Community Level Factors Impacting Breastfeeding

### Key Cultural Points:

- The Appalachian cultural characteristics of independence, self-reliance, and pride are instrumental in giving women confidence to breastfeed in public places.
- Appalachians value humor and often use humor to cope in confrontational situations.
- Individuals of Appalachian culture often have a mistrust of outsiders and their intentions. Perhaps this leads to the *fear* that breastfeeding in public places elicits among some Appalachian women.
- Most mothers living in poverty are young, and they may not have strong social support for breastfeeding from their similar age peers.
- Communication within the culture of poverty is often done through informal storytelling, rather than direct, formal communication.

### Recommendations:

- Provide women an array of strategies - particularly ones that capitalize on the Appalachian values of independence, self-reliance, pride, and humor - to help them feel comfortable with breastfeeding, especially breastfeeding in public. This could be done in narrative form – by providing vignettes which illustrate tools that women can use when they find themselves in such situations.
- Try to take the *fear* out of breastfeeding in public places. Encourage local businesses and public locations such as libraries to put “breastfeeding friendly” logos in plain sight. This will help women identify safe places to breastfeed.
- Build strong social support networks for breastfeeding in the community. Consider using multi-generational approaches so that women get positive feedback for breastfeeding from all ages.

## Policy Level Factors Impacting Breastfeeding

The social-ecological model frames local, state, federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control, and management as policy-level factors. Policies at many levels influence decisions to initiate breastfeeding as well as the ability to persist with breastfeeding.

**Literature review.** Breastfeeding is encouraged on many levels, including the guidelines put in place at a national level by the U.S. Department of Health and Human Services via the Healthy People 2020 objectives. A list of objectives specifies target rates for breastfeeding by duration (ever, at three months, at six months, and at one year), which are specific to both *any breastfeeding* and *exclusive breastfeeding* (HHS, Healthy People 2020, 2011). The target for *ever breastfed*, which is not limited to exclusive breastfeeding, is to get 81.9% of infants to be breastfed by 2020. The 2020 goal for six months of breastfeeding, which can include supplementation with formula, is to increase rates to 60.6%. This goal is considerably higher than the *exclusive breastfeeding at six months* goal of 25.5%. This difference acknowledges the difficulty of exclusive breastfeeding, especially for longer durations.

The American Academy of Pediatrics guidelines specify that, “no supplements (water, glucose water, formula, and so forth) should be given to breastfeeding newborns unless a medical indication exists (1997).” Though this guideline is in agreement with the Healthy People 2020 objective of reducing supplementation (HHS, Healthy People 2020, 2011), it is inconsistent with regular hospital procedures (Shannon et al., 2007). Further, though this recommendation is certainly in most infant’s best interests, it may increase maternal concern for appropriate weight gain. It is recommended that physicians are educated about potential problems with early supplementation, and that physicians pass this information onto mothers.

Work organizations are being encouraged to provide adequate arrangements for breastfeeding mothers. The federal guidelines in place for the Healthy People 2020 objectives include increasing the proportion of employers who provide lactation support programs, such as an on-site lactation room (HHS, Healthy People 2020, 2011). The known baseline for this kind of employer assistance was 25%, and the goal is to increase this percentage to 38% in this decade. Many employers may not have formal policies in place to protect a woman’s right to

breastfeed (Witters-Green, 2003). Further, women may not be supported by their employers in their choice to breastfeed because many employers are unaware of the advantages of breast milk over formula.

Finally, of the 50 U.S. states and the District of Columbia, 49 have legislation in place about breastfeeding in public locations (CDC, 2010). Only 16 states have legislation that mandates employer lactation support in the form of space and time to breastfeed or pump. Ohio is not included in these 16 states. Only 12 states have regulations for child care centers protecting a woman's right to have her child receive breast milk; given that two-thirds of infants in this country are habitually cared for by someone other than the parent, and half of these infants spend time in child care centers, this is potentially a major barrier to long-term breastfeeding. Ohio is one of the few states that has breastfeeding legislation for child care facilities.

**Interview findings.** While none of the women specifically mentioned the Healthy People 2020 objectives related to breastfeeding, most women reported that WIC was their primary source of breastfeeding information and support. Women indicated that educational efforts related to breastfeeding began the day that they started receiving WIC benefits; which often occurred in the first or second trimester of pregnancy. Many mothers cited their conversations with WIC staff members as their sole reason for initiating breastfeeding. Additionally, women also reported that the relationships they built with WIC staff members were a key factor in breastfeeding persistence. These intensive efforts to encourage breastfeeding initiation and persistence are aligned with the Healthy People 2020 objectives related to breastfeeding.

Another policy-level factor that women were

*You know, the only, actually, the only kind of thing that influenced me on breastfeeding or not, it would be the WIC office and they worked to try to make you breastfeed rather than formula, and not just, you know, because it is healthier for your baby, I think especially for the first couple weeks, so that's feeding, you're giving your son, you're giving your child, you know, that antibodies that you need that you can't get from a formula.*

*~ Mickey*

exposed to, but did not specifically mention by name, was the American Academy of Pediatrics guideline specifying that breastfeeding newborns should not be given supplements unless a medical indication exists. Some women who initiated breastfeeding in the hospital felt they had to advocate for themselves to prevent hospital staff from feeding their babies formula. Anne, a

*... the pediatrician told me to supplement with formula ... and [the nurses] constantly would, each shift would argue with me about what I was doing. I was like, "Well, the pediatrician was the one that told you guys to have me supplement."*

*The next shift would come in, "Why are you givin' her formula? Why are givin' her breast milk?" Why ..." I'm like, "I'm doing what you guys told me to do to begin with."*

*That was one of the most difficult things with me was gettin' all these different opinions all at once, right when you're with your first kid, that was really difficult for me.*

*~Bella*

participant, describes her experience like this: "That was a big deal whenever I had my little girl; I had to specifically say no bottles and they had to put a huge thing, note card, on her crib." Other women described situations where they perceived a hasty decision was made to introduce formula to their children. While the mothers believed that the hospital providers were acting to preserve the health of their babies; upon reflection, they often wondered if supplementing with formula was truly necessary. When physicians made a decision to supplement with formula, women described situations where they received mixed messages from other hospital staff. Some hospital staff would support the physician's decision to supplement while others would encourage the mother to exclusively breastfeed. This led to confusion and stress among women in this situation, particularly first time mothers. When these situations occurred, women were most likely to adhere to the physician's recommendations and supplement with formula.

While there were very few working mothers in the study, the women who were balancing breastfeeding and work reported that it was a difficult endeavor. Most women reported the logistics of pumping breast milk were difficult to overcome. The women who were working described workplace environments with no private space other than the restroom. Shasta, who worked in a long-term care facility, described her experience like this: "I think the privacy was

the biggest thing ‘cause ... I’m not sitting on that stall where someone else has urinated on the seat and pumping my breasts, and I’m not going out in my car because it has no electric outlet to plug it into, ‘cause mine was an electric. And, I can’t sit at the nurse’s station because it’s wide open. So, can’t go to the med room either ‘cause there’s no place to sit, and yeah, nowhere to go. Nowhere to go at all. Even out in the parking lot, patients still wander around, and I really don’t want any of them seeing anything ...” This dilemma of *nowhere to go* to pump breast milk resonated with many working mothers. The solution to this dilemma for many women who had initiated breastfeeding was to wean their babies and begin formula feeding when they returned to work. For those who persisted with breastfeeding, many women reported that they either worked part-time or arranged their schedules so they did not have to pump breast milk. Others simply chose not to initiate breastfeeding because they were not sure how to balance work with breastfeeding.

**Conclusion.** While women did not explicitly mention policy-level factors during the interviews, it was evident that they did impact breastfeeding initiation and persistence. Some policy-level factors, such as the WIC staff members’ efforts to encourage women to follow the Healthy People 2020 guidelines regarding breastfeeding, clearly supported breastfeeding initiation and persistence. Other policy-level factors had mixed results. The American Academy of Pediatrics guidelines were operationalized inconsistently in hospitals; and sometimes caused confusion or upset for women – particularly first time mothers. In terms of the workplace, many employers were supportive of breastfeeding mothers, but putting a breastfeeding policy in action proved to be difficult. Women receiving WIC benefits often do not work in environments with private spaces to pump breast milk. This left women with no place to pump breast milk and frequently negatively impacted breastfeeding initiation or persistence.

## **Summary: Policy Level Factors Impacting Breastfeeding**

### **Key Cultural Points:**

- Appalachians value personality over a person's experience, credentials, or education. If there is perceived conflict, Appalachians will typically value the opinion of those that they connect with, or like, better.
- Women in poverty frequently work in environments that do not have private places for pumping breast milk (e.g., convenience stores, restaurants, large retailers, etc.).
- The culture of poverty stresses focusing on the present; many women in this region will have difficulty with long-term planning.
- Communication within the culture of poverty is often done through informal storytelling, rather than direct, formal communication.

### **Recommendations:**

- Connect with women on a personal level when encouraging them to follow policies or best practices such as the Healthy People 2020 objectives or the American Academy of Pediatrics guidelines. When trust is established, women will be more receptive to taking action steps toward best practices.
- Provide suggestions on how to balance breastfeeding and work – especially in difficult workplace environments. This could be done in narrative form – by providing vignettes which illustrate tools that women can use when they find themselves in such situations.
- Realize that women in poverty have difficulty with long-term planning. While it makes sense to plan how to balance breastfeeding and work well in advance, many women will not approach this with such foresight. Be prepared to check-in with women after their first day back on the job to offer support and troubleshooting suggestions.

## Assessment of Current WIC Infant Feeding Literature

As part of the group interview, women were asked to assess the current WIC breastfeeding literature. They were invited to share what information about was useful as well as make suggestions for improvement. Almost all of the women were very familiar with the WIC breastfeeding literature. Most women noted that they received the literature during their WIC intake appointment, which was typically in the first or second trimester of pregnancy.

**Interview findings.** Most breastfeeding mothers noted that they referred to the literature often and found it a valuable source of information. Mothers specifically recalled the following content and deemed it as very helpful and/or useful: (1) Breastfeeding Bowel Movement Chart, (2) Baby's Stomach Size Over Time, (3) Wet Diaper Record Sheet, (4) Breastfeeding Holds, (5) Breast Milk Pumping and Storage, (6) Infant Growth and Development, and (7) Basic How To for Breastfeeding.

While the breastfeeding literature was very useful for some mothers, it was widely noted

*... you can have all the pamphlets, you can have pamphlets ... filling up an entire room of ... your house, but if you go in and you say, "Oh, I want to breastfeed," but if there's even the slightest hiccup in the, in the process, "If they're saying here, give 'em a bottle." ... then you're left to make the decisions that work out for your family.*

*~ Sarah*

by both breast- and formula feeding mothers that printed text was not the best way that all women learned information.

Many mothers noted a breastfeeding DVD that they watched at the hospital or WIC office that they perceived as very helpful. Almost all women noted the importance of having in-person support. Tiffany noted: "There ain't enough information on [breastfeeding]. I mean, there is, but you don't get showed, I can read a thing all day long, and sit there and read it again and read it again. But, when it comes time to do it in a hospital, and you're so overwhelmed with just having a baby and stuff, I think that they should have more, more support there, showin' you how to do it, you know?"

The primary criticism of the WIC materials was that the graphics and photos were outdated. For the most part, the women agreed the presentation of the material needed to be

modernized. Many women also suggested that all of the pamphlets be condensed and compiled into one book. They perceived the some of the pamphlets as being redundant and thought that having so many pamphlets was overwhelming. By compiling the information into one central source, there was less chance for information to get misplaced when it was needed.

Women also perceived that the literature pertaining to breastfeeding did not offer them an accurate portrayal of breastfeeding. Most women perceived that the literature focused on the positives of breastfeeding and made it sound “easier” than it really was. This caused women to be unprepared for breastfeeding challenges and feel like they were alone if they were experiencing difficulties. As Andrea explains, “They need to have a pamphlet that explains the good and the bad, just for breastfeeding.” Some women expressed the need for an information source that addressed the *ugly side* of breastfeeding: mastitis, inverted nipples, bleeding nipples, the challenges of breastfeeding twins or premature babies, etc. Women were particularly interested in the presentation of other women’s breastfeeding stories, particularly challenges and how they were mitigated.

Overwhelmingly, women desired a balanced perspective of infant feeding. They would like an inclusive text that details both breast- and formula feeding. They thought that having all of the information in one place would help them make the best decision. Jessica’s thoughts were echoed by many women, “Just ... give ‘em all the options at once, not just like if you mark breastfeeding - they give you a bunch of breastfeeding, if you mark formula feeding - they give you stuff on formula feeding. To give you all of it so that way, you know, you [had everything you needed].”

Mothers who formula fed perceived they were given little or no information about how to feed their babies. Nicole expressed her concern: “I didn’t get any, a lot of materials on like the bottle-feeding thing. I just don’t think they put [that information] out, it’s a lot about breastfeeding, breastfeeding. For us, it’s kind of like we’re on the [other] side ... because ... it’s

*That’s the ugly of the breastfeeding. You know, like the, the things that they don’t tell you. ...Yeah, I think if [the WIC literature] attacked more of the difficulties and the challenges of breastfeeding, that people might be more prepared.*  
~ Alicia

all about the breastfeeding. So, it would be nice if [WIC] would kind of give us a little bit more information so that we didn't have to look it up on the internet, and hopefully we're gettin' the right information." Women who were formula feeding their babies would like information specifically related to: (1) formula safety, (2) proper formula preparation, (3) how to choose a formula, (4) off-brand or store-brand formula versus traditional brand name formula (i.e., Similac, Enfamil, etc.), and (5) soy versus cow's milk formula.

**Conclusion.** In terms of print material, women are requesting a single source of information for breast- and formula feeding. The material needs to be updated and include modernized graphics and photos. Women would like to read *stories* of how others have addressed challenges related to both breast- and formula feeding. In terms of breastfeeding, women would like to see a more balanced approach that recognizes that while *breastfeeding is natural, it is not easy*. Women would also like a comprehensive presentation of formula feeding. Most importantly, women perceive printed text as a strategy that supports personal interaction and does not replace it. They believe that the personal interaction and support they receive from WIC is essential, whether they choose to breast- or formula feed.

## RECOMMENDATIONS



### Recommendations

The literature review for this study – Jones’ (1994) Appalachian values and Payne’s (2005) framework for understanding the culture of poverty – identified key cultural characteristics of the target population. These same cultural characteristics emerged throughout the analysis of the group interviews. The following table identifies the key cultural themes and offers culturally appropriate approaches to improve breastfeeding initiation and persistence among Appalachian women.

Culturally Appropriate Approaches for Reaching Appalachian Women	
Use of Story-telling Techniques	Written educational materials should use narratives and vignettes to instruct women about breastfeeding.
	Written educational materials should use stories to demonstrate options for addressing challenges associated with breastfeeding.
	Providers should utilize stories or scenarios about other people's breastfeeding experiences to reinforce key teaching points.

Use of Humor	Written educational materials should use humor to make the people in narratives and vignettes more likeable and relatable.
	Self-deprecating humor is culturally appropriate.
	Written educational materials should show how humor is a tool to overcome breastfeeding challenges such as pain and fatigue.
	Providers should utilize humor, when appropriate, to reinforce key teaching points.
Love of Place	Written educational materials should incorporate specific places (i.e., counties and towns) in narratives and vignettes.
	Written educational materials should identify places in narratives or vignettes to make the story more relatable.
Belief in Fate	Being aware of the fatalistic tendencies of this population is important. Providing women with multiple strategies to overcome obstacles rather than simply accepting that "breastfeeding did not work for me" is essential.
	All educational approaches should realistically identify challenges related to breastfeeding that will likely be encountered (e.g., time commitment, pain, technique, engorgement, etc.) to allow women to know that they are not alone if they struggle with breastfeeding.
	Written educational materials should include narratives or vignettes that illustrate breastfeeding challenges, with emphasis on how challenges are not permanent and can be overcome.
Love of Family	Written educational materials should include narratives about how breastfeeding mothers interact with family members; especially those with dissenting opinions regarding breastfeeding.
	Written educational materials should include information that breastfeeding mothers could share with family members.
	Providers should encourage women to discuss breastfeeding with family and friends.

Characteristics of Independence, Self-reliance, and Pride	Providers should avoid using the <i>parent voice</i> or talking down to Appalachian women. Providers should focus on helping women make informed choices for themselves rather than telling them what they <i>should</i> do.
	When possible, written educational materials should identify multiple potential solutions in narrative format. This will allow women to find a strategy that best fits their personal situation.
	Many women are concerned about leaving the house while breastfeeding because they do not know where they can safely and comfortably breastfeed in public. Encouraging local businesses to place a <i>breastfeeding friendly</i> sticker on storefronts will allow women to independently know where breastfeeding is welcome.
Mistrust of Outsiders and Their Intentions	For this population, providers should be aware that personality is more important than expertise and credentials. In order to be successful at educating women about breastfeeding, developing a personal connection is important.
	Women develop personal relationships by sharing stories.
Lack of Planning and Procedural Foresight	Providers should discuss breastfeeding with women several times. For this population, planning and systematic exploration of educational materials can be challenging; therefore, having multiple conversations about breastfeeding is appropriate.
	Because systematic exploration of educational materials can be challenging, providing multiple strategies for information dissemination is important, printed text, visual media, and one-on-one interaction.
	Providers should be aware that initiating conversation about breastfeeding while women are on the labor and delivery unit is appropriate. Due to the lack of planning and procedural foresight, many Appalachian women will not have made a decision regarding infant feeding prior to delivery.
	Having 24/7 access to a real person to discuss breastfeeding concerns with is reassuring to this population; consider providing a statewide or regional hotline for breastfeeding assistance.

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## **Appendix A: Interview Protocol**

Hello everyone and thank you for allowing us to talk with you today. My name is \_\_\_\_\_ and I work for Ohio University's Voinovich School for Leadership and Public Affairs. This is \_\_\_\_\_ and she will be assisting with the group today. We are working with Ohio Department of Health on a project related to infant feeding practices in Appalachia.

The purpose of this focus group today is to collect your thoughts and feelings about the experiences you have had in feeding your child (or children). We hope this discussion can help us gain insight into women's general perceptions and experiences in regard to different types of feeding practices. We are also interested in your thoughts about what can be done through WIC to help mothers make informed decisions about feeding their babies.

One important thing to remember during our conversation is that everyone's ideas are important, and they should be allowed to freely express their thoughts and feelings. The ideas expressed here may be personal and should not be used against anyone inside or outside of this meeting. From time to time we may interrupt to allow someone to speak who may not have said anything for a while. Also, we may have to interrupt someone to move on to another question because of a time limit under which we are working. We apologize in advance if this happens.

The discussion will be digitally recorded. The recording will be used for our reference only and will be erased once the research report is complete. As I mentioned before, \_\_\_\_\_ will be facilitating the process by taking notes. Our reports to the research team will not include actual names of participants, but rather will include a pretend name you can choose for yourself, so your individual comments will be strictly confidential. Should you feel uncomfortable at any time during the discussion, remember that you do not have to contribute to the discussion. Does anyone have a concern about this procedure? (Wait for responses) If not, then let us begin.

Opening Question: (to be answered by all)

Your confidentiality is very important to us. To help keep your identity confidential, but still be respectful, we would like you to choose a name for yourself. This is sort of like in Spanish or French class where you got to choose a special name. To get us started, please first tell us the name you have chosen for today and then tell the group what was the most surprising thing about becoming a mother?

Introductory Questions

As I mentioned earlier, the purpose of the group today is to talk about the many choices women have about feeding their babies. To begin, we are going to ask you some general questions about breastfeeding and formula feeding.

1. Think back to your first pregnancy. What information do you remember getting about the choice to breastfeed or formula feed your baby? (Interpersonal, Organizational/Institutional)
  - A. Where did you get that information? (Interpersonal, Organizational/Institutional)
  - B. What were your initial thoughts about feeding your baby? (Intrapersonal)
    - i. Follow-up: When making your decision about how to feed your baby, how did the cost of formula factor into your decision? (Organizational/Institutional)

Transition Questions

2. Now that you have had your baby (or babies), what are your thoughts about breastfeeding? (Intrapersonal)
  - A. If you have ever breastfed (or are still breastfeeding), what kinds of things do you remember about your experience? (Intrapersonal)
    - i. Follow-up: Some mother's express or "pump" their breastmilk. If you have ever used a breastpump, what kinds of things do you remember about your experience? (Intrapersonal)
  - B. How do you think others in your community feel about breastfeeding? (Community)
    - i. How do you or did you feel about breastfeeding your baby in public? (Community)
    - ii. Follow-up: How do others in your community feel about mothers who breastfeed in public? (Community)
  - C. What do mothers think are the advantages associated with breastfeeding? (Intrapersonal)

- D. What do mothers think are the disadvantages associated with breastfeeding?  
(Intrapersonal)
3. Since we have talked quite a bit about breastfeeding, we are going to talk about formula feeding for awhile. What are your thoughts about formula feeding? (Intrapersonal)
- A. If you have ever used formula (or are still using formula), what kinds of things do you remember about your experience? (Intrapersonal)
  - B. How do mothers decide what type of formula to use? (Organizational/Institutional)
  - C. What do mothers think are the advantages associated with formula feeding?  
(Intrapersonal)
  - D. What do mothers think are the disadvantages associated with formula feeding?  
(Intrapersonal)

#### Key Questions

4. We know that other people can influence our behaviors. How do you think other people impacted your decision regarding how you chose to feed your baby, that is, choosing to breastfeed or formula feed? (Interpersonal)
- A. How did *people close to you* influence your choices related to feeding your baby?
    - i. Probe for *partner*- How did your spouse, partner, or significant other influence your decisions about breastfeeding or formula feeding?
      - 1. What do you wish your spouse, partner, or significant other would have said or done to support your decisions related to feeding your baby?
    - ii. Probe for *family and friends*: What about your family and friends? How did they influence your decisions about breastfeeding or formula feeding?  
(Interpersonal)
      - 1. What do you wish your family and/or friends would have said or done to support your decisions related to feeding your baby?
  - B. Now, we are going to focus on *health care providers*.
    - i. When you were pregnant, how did *your healthcare provider* influence your decision about feeding your baby? (Interpersonal & Organizational/Institutional)

1. Probe for type of healthcare provider (e.g., nurse, OB/GYN, pediatrician, nurse practitioner, midwife, family physician, etc.)
  - ii. After you had your baby, how did your baby's healthcare provider influence your decision about feeding your baby? (Interpersonal & Organizational/Institutional)
    1. Probe for type of healthcare provider (e.g., nurse, OB/GYN, pediatrician, nurse practitioner, midwife, family physician, etc.)
  - iii. What kind of information do you wish you had gotten from your health care provider or your baby's health care provider to support your decisions related to feeding your baby? (Interpersonal)
    1. Probe for type of healthcare provider (e.g., nurse, OB/GYN, pediatrician, nurse practitioner, midwife, family physician, etc.)
- C. For those of you who went to *work* after having your baby, what kinds of things did you have to deal with and consider in terms of your job and feeding your baby? (Interpersonal & Community)
- i. How did returning to work impact your decision to either breastfeed or formula feed your baby? (Policy)
  - ii. If you decided to breastfeed when returning to work, how did your *boss or supervisor* feel about your decision to continue breastfeeding? Were there any issues? (Interpersonal)
  - iii. If you decided to breastfeed and work, how did your *coworkers* feel about your decision to continue breastfeeding? (Interpersonal)
  - iv. If you went back to work, were there any workplace rules that made it difficult to keep breastfeeding? (Policy) If so, what were they?
  - v. If you decided to breastfeed and work, how did your *child care provider* support your decision to continue breastfeeding?
5. We are going to close our interview by asking you a few questions about the WIC office. Remember, your responses to these questions will not impact your WIC benefits in any way. (Organizational/Institutional)
- A. What kind of information and materials did you get from WIC about feeding your baby?

- B. At what point (during pregnancy or after having your baby) did you start receiving information from WIC about feeding your baby?
  - C. Here are some of the materials that WIC has available. (Show current WIC materials/pamphlets/handouts.)
    - i. Which of these have you seen?
    - ii. Which of these have you actually read through?
    - iii. What did you find helpful from the materials?
    - iv. Was there anything you didn't like about the materials?
    - v. If WIC wanted to improve the materials, what advice would you give them?
  - D. What kind of information and support would be helpful to get from WIC in terms of feeding your baby?
6. Are there any other comments or concerns you would like to share with us? Was there a question that you hoped I would ask that I didn't ask?

This concludes our discussion. We would like to thank you all for participating. Your contribution is extremely helpful, and the Ohio Department of Health and our team at Ohio University are greatly appreciative.

## Appendix B: Survey Instrument

1. Pretend Name (Please do no use your real name.)

\_\_\_\_\_

### Your History

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2. Year of Birth: \_\_\_\_\_

3. State where you were born: \_\_\_\_\_

4. County (not *country*) where you were born: \_\_\_\_\_

5. Where was your most recent child born?

City Name: \_\_\_\_\_ Hospital Name: \_\_\_\_\_

6. Have you ever taken a prenatal class?  Yes  No

7. Have you ever taken a breastfeeding class?  Yes  No

8. Are you currently breastfeeding?  Yes  No

9. If yes, when was your baby born? \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
MM DD YYYY

10. If no, what is the longest length of time you have breastfed any of your other children?

- Number of weeks: \_\_\_\_\_  
 Less than one week  
 Never

11. Why did you stop breastfeeding, or choose not to breastfeed, your most recent child?

Medical reason(s)  Work  Personal reasons  Child weaned

12. Did you ever use a breast pump with your most recent child?  Yes  No

13. If yes, what kind of breast pump did you use? (Select all that apply.)  Electric pump  Hand pump

14. Did your mother work while any of her children were infants?

Yes  No  Don't know

15. How many of your mother's children (i.e., you and your siblings) were breastfed?

All  One or more  None  Don't know

16. How many members of your (or your spouse/partner's) family currently live in your home? (Select all that apply.)

- Your great-grandparent(s) or your spouse/partner's great-grandparent(s)  None  
 Your grandparent(s) or your spouse/partner's grandparent(s)  
 Your parent(s) or your spouse/partner's parent(s)  
 Your sibling(s) or your spouse/partner's sibling(s)

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Please Continue on Back

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17. With your most recent child, do/did you use childcare on a regular basis?  Yes  No

18. If yes, who primarily provides/provided your childcare? (Select all that apply.)

An older relative

A relative close to your own age

A younger relative

Daycare

Other: \_\_\_\_\_

### Work and Child Care

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19. After the birth of your most recent child, did you return to work or begin working?  Yes  No

**IF YES, ANSWER QUESTIONS 20-24.**

**IF NO, THE SURVEY IS COMPLETE.**

20. What was your employment situation?

Worked full-time  Worked part-time  Worked more than one job  Worked from home

21. In what area were you employed after the birth of your most recent child? (If you worked more than one job, mark all that apply.)

Fast food/restaurant

Manufacturing/assembly/factory

Retail store

Education/child care/within schools or daycare

Office/administrative

Healthcare (e.g. CNA, RN, medical office, etc.)

Other: \_\_\_\_\_

22. Did you take maternity leave with your most recent child?  Yes  No

23. If yes, how many weeks was your maternity leave? \_\_\_\_\_ weeks

24. Did your employer pay you while you were on maternity leave?  Yes  No

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## Appendix C: Survey Results

<b>I. Participant's Current County of Residence</b>		
<b>County</b>	<b>Count</b>	<b>Percent</b>
Adams	15	8.6%
Athens	7	4.0%
Belmont	5	2.9%
Brown	10	5.7%
Clermont	5	2.9%
Gallia	10	5.7%
Guernsey	12	6.9%
Hocking	9	5.1%
Jackson	7	4.0%
Lawrence	7	4.0%
Meigs	11	6.3%
Monroe	10	5.7%
Morgan	11	6.3%
Muskingum	9	5.1%
Noble	7	4.0%
Perry	6	3.4%
Pike	12	6.9%
Vinton	11	6.3%
Washington	11	6.3%
<b>Total</b>	<b>175</b>	<b>100.0%</b>

<b>II. Participants Born in Appalachian Counties</b>		
<b>State</b>	<b>Count</b>	<b>Percent</b>
Kentucky	1	0.9%
North Carolina	1	0.9%
Ohio	87	82.1%
Pennsylvania	1	0.9%
West Virginia	16	15.1%
<b>Total</b>	<b>106</b>	<b>100.0%</b>

<b>III. Total Participants Born in Appalachia</b>		
<b>Appalachian Born</b>	<b>Count</b>	<b>Percent</b>
Yes	106	60.6%
No	69	39.4%
<b>Total</b>	<b>175</b>	<b>100.0%</b>

<b>IV. Participant Age (in years)</b>					
<b>County</b>	<b>Average Age</b>	<b>Median Age</b>	<b>Count</b>	<b>Minimum Age</b>	<b>Maximum Age</b>
Adams	28.7	29.0	15	20	37
Athens	29.0	27.0	7	22	44
Belmont	21.8	21.0	5	20	26
Brown	26.5	26.0	10	21	35
Clermont	28.8	27.0	5	22	40
Gallia	29.1	27.0	10	21	44
Guernsey	27.6	25.0	12	20	37
Hocking	28.8	30.0	9	22	35
Jackson	22.1	25.0	7	*	30
Lawrence	23.3	23.0	7	19	28
Meigs	29.9	31.0	11	21	40
Monroe	31.5	31.0	10	24	39
Morgan	24.4	22.0	11	20	33
Muskingum	27.4	26.0	9	22	38
Noble	28.9	23.0	7	20	42
Perry	27.5	28.0	6	20	33
Pike	30.8	30.0	12	24	42
Vinton	27.9	29.0	11	19	39
Washington	28.5	27.0	11	20	38
<b>Total</b>	<b>27.8</b>	<b>27.0</b>	<b>175</b>	<b>*</b>	<b>44</b>

Note: \* represents a non-response

<b>V. Have you ever taken a prenatal class?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	7	46.7%	8	53.3%	15
Athens	5	71.4%	2	28.6%	7
Belmont	0	0.0%	5	100.0%	5
Brown	6	66.7%	3	33.3%	9
Clermont	1	20.0%	4	80.0%	5
Gallia	6	66.7%	3	33.3%	9
Guernsey	9	75.0%	3	25.0%	12
Hocking	3	33.3%	6	66.7%	9
Jackson	3	42.9%	4	57.1%	7
Lawrence	0	0.0%	7	100.0%	7
Meigs	8	72.7%	3	27.3%	11
Monroe	6	60.0%	4	40.0%	10
Morgan	3	27.3%	8	72.7%	11
Muskingum	4	44.4%	5	55.6%	9
Noble	4	57.1%	3	42.9%	7
Perry	3	50.0%	3	50.0%	6
Pike	2	16.7%	10	83.3%	12
Vinton	4	40.0%	6	60.0%	10
Washington	5	45.5%	6	54.5%	11
<b>Total</b>	<b>79</b>	<b>45.9%</b>	<b>93</b>	<b>54.1%</b>	<b>172</b>

<b>VI. Have you ever taken a breastfeeding class?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	2	13.3%	13	86.7%	15
Athens	4	57.1%	3	42.9%	7
Belmont	3	60.0%	2	40.0%	5
Brown	3	30.0%	7	70.0%	10
Clermont	1	20.0%	4	80.0%	5
Gallia	3	33.3%	6	66.7%	9
Guernsey	7	63.6%	4	36.4%	11
Hocking	3	33.3%	6	66.7%	9
Jackson	2	28.6%	5	71.4%	7
Lawrence	0	0.0%	7	100.0%	7
Meigs	9	81.8%	2	18.2%	11
Monroe	5	50.0%	5	50.0%	10
Morgan	2	18.2%	9	81.8%	11
Muskingum	3	37.5%	5	62.5%	8
Noble	1	14.3%	6	85.7%	7
Perry	5	83.3%	1	16.7%	6
Pike	0	0.0%	11	100.0%	11
Vinton	5	45.5%	6	54.5%	11
Washington	2	18.2%	9	81.8%	11
<b>Total</b>	<b>60</b>	<b>35.1%</b>	<b>111</b>	<b>64.9%</b>	<b>171</b>

<b>VII. Are you currently breastfeeding?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	3	20.0%	12	80.0%	15
Athens	5	71.4%	2	28.6%	7
Belmont	1	20.0%	4	80.0%	5
Brown	1	10.0%	9	90.0%	10
Clermont	3	60.0%	2	40.0%	5
Gallia	4	40.0%	6	60.0%	10
Guernsey	4	33.3%	8	66.7%	12
Hocking	3	33.3%	6	66.7%	9
Jackson	1	14.3%	6	85.7%	7
Lawrence	2	28.6%	5	71.4%	7
Meigs	6	54.5%	5	45.5%	11
Monroe	2	20.0%	8	80.0%	10
Morgan	2	18.2%	9	81.8%	11
Muskingum	2	22.2%	7	77.8%	9
Noble	4	57.1%	3	42.9%	7
Perry	4	66.7%	2	33.3%	6
Pike	2	16.7%	10	83.3%	12
Vinton	1	9.1%	10	90.9%	11
Washington	5	45.5%	6	54.5%	11
<b>Total</b>	<b>55</b>	<b>31.4%</b>	<b>120</b>	<b>68.6%</b>	<b>175</b>

<b>VIII. Age of Babies Still Breastfeeding (in weeks)</b>					
<b>County</b>	<b>Average Age</b>	<b>Median Age</b>	<b>Count</b>	<b>Minimum Age</b>	<b>Maximum Age</b>
Adams	27.0	35.0	3	3	43
Athens	13.8	5.0	5	4	44
Belmont	13.0	13.0	1	13	13
Brown	53.0	53.0	1	53	53
Clermont	49.0	44.0	3	6	97
Gallia	42.0	14.0	4	4	136
Guernsey	11.8	10.5	4	7	19
Hocking	25.0	19.0	3	14	42
Jackson	37.0	37.0	1	37	37
Lawrence	15.0	15.0	2	6	24
Meigs	12.7	9.0	6	5	28
Monroe	31.0	31.0	2	30	32
Morgan	35.0	35.0	2	34	36
Muskingum	6.5	6.5	2	6	7
Noble	13.0	7.5	4	3	34
Perry	25.8	26.0	4	13	38
Pike	50.5	50.5	2	33	68
Vinton	41.0	41.0	1	41	41
Washington	29.0	11.0	5	0	77
<b>Total</b>	<b>25.2</b>	<b>19.0</b>	<b>55</b>	<b>0</b>	<b>136</b>

Note: Responses are limited to infants reported to still be breastfeeding.

**IX. If you are not currently breastfeeding, what is the longest length of time you have breastfed any of your other children?**

County	More Than One Week		Less Than One Week		Never		Total Count
	Count	Percent	Count	Percent	Count	Percent	
Adams	6	50.0%	1	8.3%	5	41.7%	12
Athens	2	100.0%	0	0.0%	0	0.0%	2
Belmont	3	75.0%	0	0.0%	1	25.0%	4
Brown	4	44.4%	1	11.1%	4	44.4%	9
Clermont	2	100.0%	0	0.0%	0	0.0%	2
Gallia	5	83.3%	0	0.0%	1	16.7%	6
Guernsey	6	100.0%	0	0.0%	0	0.0%	6
Hocking	4	66.7%	0	0.0%	2	33.3%	6
Jackson	4	66.7%	0	0.0%	2	33.3%	6
Lawrence	3	75.0%	1	25.0%	0	0.0%	4
Meigs	4	80.0%	0	0.0%	1	20.0%	5
Monroe	7	87.5%	0	0.0%	1	12.5%	8
Morgan	1	11.1%	0	0.0%	8	88.9%	9
Muskingum	5	71.4%	0	0.0%	2	28.6%	7
Noble	1	33.3%	1	33.3%	1	33.3%	3
Perry	1	50.0%	0	0.0%	1	50.0%	2
Pike	8	72.7%	0	0.0%	3	27.3%	11
Vinton	4	40.0%	1	10.0%	5	50.0%	10
Washington	1	20.0%	2	40.0%	2	40.0%	5
<b>Total</b>	<b>71</b>	<b>60.7%</b>	<b>7</b>	<b>6.0%</b>	<b>39</b>	<b>33.3%</b>	<b>117</b>

Note: Responses are limited to participants who indicated they are not currently breastfeeding.

**X. If you are not currently breastfeeding, what is the longest length of time you have breastfed in any of your other children (in weeks)?**

County	Average Duration	Median Duration	Count	Minimum Duration	Maximum Duration
Adams	26.4	10.5	6	4.5	96
Athens	8.0	8.0	2	8	8
Belmont	10.2	8.5	3	6	16
Brown	8.5	4.5	4	1	24
Clermont	32.0	32.0	2	12	52
Gallia	10.2	12.0	5	2	20
Guernsey	15.0	8.0	6	4	40
Hocking	47.3	52.0	4	5	80
Jackson	9.8	9.0	4	3	18
Lawrence	15.0	7.0	3	2	36
Meigs	23.0	21.0	4	6	44
Monroe	45.5	60.0	7	2.5	104
Morgan	10.0	10.0	1	10	10
Muskingum	13.1	3.0	5	1.5	44
Noble	28.0	28.0	1	28	28
Perry	38.0	38.0	1	38	38
Pike	52.8	30.0	8	3	144
Vinton	35.5	37.0	4	8	60
Washington	64.0	64.0	1	64	64
<b>Total</b>	<b>26.7</b>	<b>14.0</b>	<b>71</b>	<b>1</b>	<b>144</b>

*Note:* Responses are limited to participants who reported previously breastfeeding for at least one week.

<b>XI. Breastfeeding Experience With Most Recent Child</b>		
Duration	Count	Percent
Currently Breastfeeding	55	32.0%
More Than One Week	71	41.3%
Less Than One Week	7	4.1%
Never Breastfed	39	22.7%
<b>Total</b>	<b>172</b>	<b>100.0%</b>

**XII. Why did you stop breastfeeding, or choose not to breastfeed, your most recent child?**

County	Medical Reason(s)		Work		Personal Reasons		Child Weaned		Total Count
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	
Adams	3	27.3%	3	27.3%	4	36.4%	1	9.1%	11
Athens	0	0.0%	0	0.0%	1	100.0%	0	0.0%	1
Belmont	0	0.0%	0	0.0%	2	66.7%	1	33.3%	3
Brown	3	42.9%	2	28.6%	2	28.6%	0	0.0%	7
Clermont	0	0.0%	0	0.0%	1	50.0%	1	50.0%	2
Gallia	1	20.0%	0	0.0%	2	40.0%	2	40.0%	5
Guernsey	2	33.3%	1	16.7%	3	50.0%	0	0.0%	6
Hocking	1	16.7%	0	0.0%	1	16.7%	4	66.7%	6
Jackson	1	20.0%	0	0.0%	4	80.0%	0	0.0%	5
Lawrence	2	50.0%	0	0.0%	1	25.0%	1	25.0%	4
Meigs	0	0.0%	0	0.0%	2	100.0%	0	0.0%	2
Monroe	2	28.6%	0	0.0%	1	14.3%	4	57.1%	7
Morgan	0	0.0%	1	12.5%	6	75.0%	1	12.5%	8
Muskingum	0	0.0%	0	0.0%	4	80.0%	1	20.0%	5
Noble	1	33.3%	0	0.0%	2	66.7%	0	0.0%	3
Perry	0	0.0%	0	0.0%	1	100.0%	0	0.0%	1
Pike	0	0.0%	0	0.0%	6	85.7%	1	14.3%	7
Vinton	1	12.5%	0	0.0%	5	62.5%	2	25.0%	8
Washington	0	0.0%	0	0.0%	2	66.7%	1	33.3%	3
<b>Total</b>	<b>17</b>	<b>18.1%</b>	<b>7</b>	<b>7.4%</b>	<b>50</b>	<b>53.2%</b>	<b>20</b>	<b>21.3%</b>	<b>94</b>

<b>XIII. Did you ever use a breast pump with your most recent child?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	7	46.7%	8	53.3%	15
Athens	7	100.0%	0	0.0%	7
Belmont	4	80.0%	1	20.0%	5
Brown	4	40.0%	6	60.0%	10
Clermont	3	60.0%	2	40.0%	5
Gallia	5	50.0%	5	50.0%	10
Guernsey	10	83.3%	2	16.7%	12
Hocking	7	77.8%	2	22.2%	9
Jackson	5	71.4%	2	28.6%	7
Lawrence	5	83.3%	1	16.7%	6
Meigs	8	72.7%	3	27.3%	11
Monroe	9	90.0%	1	10.0%	10
Morgan	3	30.0%	7	70.0%	10
Muskingum	6	66.7%	3	33.3%	9
Noble	5	71.4%	2	28.6%	7
Perry	4	66.7%	2	33.3%	6
Pike	6	50.0%	6	50.0%	12
Vinton	4	36.4%	7	63.6%	11
Washington	4	36.4%	7	63.6%	11
<b>Total</b>	<b>106</b>	<b>61.3%</b>	<b>67</b>	<b>38.7%</b>	<b>173</b>

<b>XIV. What type of breast pump did you use?</b>							
<b>County</b>	<b>Electric</b>		<b>Hand</b>		<b>Both</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	5	71.4%	0	0.0%	2	28.6%	7
Athens	3	50.0%	0	0.0%	3	50.0%	6
Belmont	2	50.0%	0	0.0%	2	50.0%	4
Brown	4	100.0%	0	0.0%	0	0.0%	4
Clermont	2	66.7%	0	0.0%	1	33.3%	3
Gallia	2	40.0%	1	20.0%	2	40.0%	5
Guernsey	8	80.0%	1	10.0%	1	10.0%	10
Hocking	3	42.9%	0	0.0%	4	57.1%	7
Jackson	4	80.0%	1	20.0%	0	0.0%	5
Lawrence	2	40.0%	0	0.0%	3	60.0%	5
Meigs	1	12.5%	4	50.0%	3	37.5%	8
Monroe	6	75.0%	0	0.0%	2	25.0%	8
Morgan	3	100.0%	0	0.0%	0	0.0%	3
Muskingum	6	100.0%	0	0.0%	0	0.0%	6
Noble	4	80.0%	0	0.0%	1	20.0%	5
Perry	2	50.0%	1	25.0%	1	25.0%	4
Pike	4	66.7%	2	33.3%	0	0.0%	6
Vinton	2	50.0%	1	25.0%	1	25.0%	4
Washington	1	25.0%	3	75.0%	0	0.0%	4
<b>Total</b>	<b>64</b>	<b>61.5%</b>	<b>14</b>	<b>13.5%</b>	<b>26</b>	<b>25.0%</b>	<b>104</b>

Note: Types were not specified by one participant in Monroe and Athens counties.

**XV. Did your mother work while any of her children were infants?**

County	Yes		No		Don't Know		Total Count
	Count	Percent	Count	Percent	Count	Percent	
Adams	7	46.7%	6	40.0%	2	13.3%	15
Athens	4	57.1%	2	28.6%	1	14.3%	7
Belmont	1	25.0%	2	50.0%	1	25.0%	4
Brown	8	80.0%	0	0.0%	2	20.0%	10
Clermont	2	40.0%	3	60.0%	0	0.0%	5
Gallia	3	30.0%	3	30.0%	4	40.0%	10
Guernsey	9	75.0%	2	16.7%	1	8.3%	12
Hocking	4	44.4%	4	44.4%	1	11.1%	9
Jackson	3	42.9%	3	42.9%	1	14.3%	7
Lawrence	5	71.4%	1	14.3%	1	14.3%	7
Meigs	4	36.4%	6	54.5%	1	9.1%	11
Monroe	5	50.0%	5	50.0%	0	0.0%	10
Morgan	6	54.5%	2	18.2%	3	27.3%	11
Muskingum	5	55.6%	4	44.4%	0	0.0%	9
Noble	4	57.1%	3	42.9%	0	0.0%	7
Perry	2	33.3%	1	16.7%	3	50.0%	6
Pike	1	8.3%	9	75.0%	2	16.7%	12
Vinton	5	45.5%	6	54.5%	0	0.0%	11
Washington	6	54.5%	5	45.5%	0	0.0%	11
<b>Total</b>	<b>84</b>	<b>48.3%</b>	<b>67</b>	<b>38.5%</b>	<b>23</b>	<b>13.2%</b>	<b>174</b>

XVI. How many of your mother's children (i.e., your siblings) were breastfed?									
County	All		One or More		None		Don't Know		Total Count
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	
Adams	4	26.7%	3	20.0%	6	40.0%	2	13.3%	15
Athens	3	42.9%	1	14.3%	1	14.3%	2	28.6%	7
Belmont	1	20.0%	0	0.0%	4	80.0%	0	0.0%	5
Brown	2	20.0%	2	20.0%	3	30.0%	3	30.0%	10
Clermont	1	20.0%	0	0.0%	4	80.0%	0	0.0%	5
Gallia	1	10.0%	2	20.0%	5	50.0%	2	20.0%	10
Guernsey	4	33.3%	3	25.0%	5	41.7%	0	0.0%	12
Hocking	0	0.0%	7	77.8%	1	11.1%	1	11.1%	9
Jackson	2	28.6%	1	14.3%	4	57.1%	0	0.0%	7
Lawrence	1	16.7%	3	50.0%	2	33.3%	0	0.0%	6
Meigs	2	20.0%	4	40.0%	3	30.0%	1	10.0%	10
Monroe	0	0.0%	6	60.0%	4	40.0%	0	0.0%	10
Morgan	0	0.0%	2	18.2%	8	72.7%	1	9.1%	11
Muskingum	2	22.2%	2	22.2%	4	44.4%	1	11.1%	9
Noble	3	42.9%	1	14.3%	2	28.6%	1	14.3%	7
Perry	1	16.7%	2	33.3%	3	50.0%	0	0.0%	6
Pike	4	33.3%	0	0.0%	5	41.7%	3	25.0%	12
Vinton	3	27.3%	0	0.0%	7	63.6%	1	9.1%	11
Washington	1	9.1%	2	18.2%	8	72.7%	0	0.0%	11
<b>Total</b>	<b>35</b>	<b>20.2%</b>	<b>41</b>	<b>23.7%</b>	<b>79</b>	<b>45.7%</b>	<b>18</b>	<b>10.4%</b>	<b>173</b>

XVII. How many members of your (or your spouse/partner's) family currently live in your home? (Select all that apply.)											
County	Great-Grandparent(s)		Grandparent(s)		Parent(s)		Sibling(s)		None		Overall Total*
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	
Adams	0	0.0%	0	0.0%	4	26.7%	5	33.3%	9	60.0%	15
Athens	0	0.0%	1	14.3%	1	14.3%	1	14.3%	5	71.4%	7
Belmont	0	0.0%	0	0.0%	2	40.0%	1	20.0%	3	60.0%	5
Brown	0	0.0%	1	10.0%	1	10.0%	1	10.0%	9	90.0%	10
Clermont	0	0.0%	0	0.0%	1	20.0%	0	0.0%	3	60.0%	5
Gallia	0	0.0%	1	10.0%	1	10.0%	0	0.0%	7	70.0%	10
Guernsey	0	0.0%	0	0.0%	2	16.7%	0	0.0%	10	83.3%	12
Hocking	0	0.0%	0	0.0%	1	11.1%	0	0.0%	7	77.8%	9
Jackson	0	0.0%	0	0.0%	2	28.6%	1	14.3%	5	71.4%	7
Lawrence	0	0.0%	0	0.0%	3	42.9%	0	0.0%	4	57.1%	7
Meigs	0	0.0%	0	0.0%	1	9.1%	0	0.0%	8	72.7%	11
Monroe	0	0.0%	0	0.0%	0	0.0%	1	10.0%	9	90.0%	10
Morgan	0	0.0%	0	0.0%	0	0.0%	1	9.1%	10	90.9%	11
Muskingum	0	0.0%	0	0.0%	1	11.1%	0	0.0%	8	88.9%	9
Noble	0	0.0%	0	0.0%	1	14.3%	1	14.3%	5	71.4%	7
Perry	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	83.3%	6
Pike	0	0.0%	0	0.0%	0	0.0%	1	8.3%	11	91.7%	12
Vinton	0	0.0%	0	0.0%	0	0.0%	4	36.4%	8	72.7%	11
Washington	0	0.0%	0	0.0%	3	27.3%	1	9.1%	7	63.6%	11
<b>Total</b>	<b>0</b>	<b>0.0%</b>	<b>3</b>	<b>1.7%</b>	<b>24</b>	<b>13.7%</b>	<b>18</b>	<b>10.3%</b>	<b>133</b>	<b>76.0%</b>	<b>175</b>

\*Note: Overall total represents all survey participants, including non-responders (n=7)

**XVIII. With your most recent child, do/did you use childcare on a regular basis?**

County	Yes		No		Total Count
	Count	Percent	Count	Percent	
Adams	6	40.0%	9	60.0%	15
Athens	0	0.0%	6	100.0%	6
Belmont	0	0.0%	5	100.0%	5
Brown	4	40.0%	6	60.0%	10
Clermont	3	60.0%	2	40.0%	5
Gallia	2	22.2%	7	77.8%	9
Guernsey	3	25.0%	9	75.0%	12
Hocking	4	44.4%	5	55.6%	9
Jackson	1	14.3%	6	85.7%	7
Lawrence	4	57.1%	3	42.9%	7
Meigs	1	9.1%	10	90.9%	11
Monroe	5	50.0%	5	50.0%	10
Morgan	0	0.0%	11	100.0%	11
Muskingum	3	37.5%	5	62.5%	8
Noble	1	16.7%	5	83.3%	6
Perry	0	0.0%	6	100.0%	6
Pike	2	22.2%	7	77.8%	9
Vinton	1	10.0%	9	90.0%	10
Washington	1	9.1%	10	90.9%	11
<b>Total</b>	<b>41</b>	<b>24.6%</b>	<b>126</b>	<b>75.4%</b>	<b>167</b>

<b>XIX. If you use childcare on a regular basis, who primarily provides/provided your childcare? (Select all that apply.)</b>											
<b>County</b>	<b>An Older Relative</b>		<b>A relative close to your own age</b>		<b>A younger relative</b>		<b>Daycare</b>		<b>Other</b>		<b>Total Responses</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	3	50.0%	1	16.7%	0	0.0%	2	33.3%	0	0.0%	6
Athens	*	*	*	*	*	*	*	*	*	*	*
Belmont	*	*	*	*	*	*	*	*	*	*	*
Brown	2	50.0%	0	0.0%	1	25.0%	1	25.0%	0	0.0%	4
Clermont	1	33.3%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	3
Gallia	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	2
Guernsey	1	25.0%	0	0.0%	0	0.0%	1	25.0%	2	50.0%	4
Hocking	3	50.0%	1	16.7%	1	16.7%	0	0.0%	1	16.7%	6
Jackson	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Lawrence	2	40.0%	1	20.0%	0	0.0%	1	20.0%	1	20.0%	5
Meigs	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Monroe	2	33.3%	1	16.7%	1	16.7%	1	16.7%	1	16.7%	6
Morgan	*	*	*	*	*	*	*	*	*	*	*
Muskingum	2	40.0%	1	20.0%	1	20.0%	1	20.0%	0	0.0%	5
Noble	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Perry	*	*	*	*	*	*	*	*	*	*	*
Pike	1	50.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	2
Vinton	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Washington	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	1
<b>Total</b>	<b>21</b>	<b>43.8%</b>	<b>6</b>	<b>12.5%</b>	<b>5</b>	<b>10.4%</b>	<b>10</b>	<b>20.8%</b>	<b>6</b>	<b>12.5%</b>	<b>48</b>

Note: Responses are limited to participants who indicated regularly using childcare; participants could choose multiple options.

**XX. After the birth of your most recent child, did you return to work or begin working?**

County	Yes		No		Total Count
	Count	Percent	Count	Percent	
Adams	8	53.3%	7	46.7%	15
Athens	2	33.3%	4	66.7%	6
Belmont	1	20.0%	4	80.0%	5
Brown	6	60.0%	4	40.0%	10
Clermont	3	60.0%	2	40.0%	5
Gallia	4	57.1%	3	42.9%	7
Guernsey	10	83.3%	2	16.7%	12
Hocking	2	22.2%	7	77.8%	9
Jackson	1	14.3%	6	85.7%	7
Lawrence	4	66.7%	2	33.3%	6
Meigs	5	45.5%	6	54.5%	11
Monroe	5	50.0%	5	50.0%	10
Morgan	1	9.1%	10	90.9%	11
Muskingum	3	37.5%	5	62.5%	8
Noble	0	0.0%	6	100.0%	6
Perry	1	16.7%	5	83.3%	6
Pike	3	25.0%	9	75.0%	12
Vinton	1	11.1%	8	88.9%	9
Washington	2	18.2%	9	81.8%	11
<b>Total</b>	<b>62</b>	<b>37.3%</b>	<b>104</b>	<b>62.7%</b>	<b>166</b>

XXI. If you worked after the birth of your most recent child, what was your employment situation?									
County	Full-Time		Part-Time		More Than One Job		From Home		Total Count
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	
Adams	6	85.7%	1	14.3%	0	0.0%	0	0.0%	7
Athens	1	50.0%	1	50.0%	0	0.0%	0	0.0%	2
Belmont	0	0.0%	1	100.0%	0	0.0%	0	0.0%	1
Brown	3	50.0%	3	50.0%	0	0.0%	0	0.0%	6
Clermont	1	33.3%	2	66.7%	0	0.0%	0	0.0%	3
Gallia	0	0.0%	2	66.7%	0	0.0%	1	33.3%	3
Guernsey	3	33.3%	6	66.7%	0	0.0%	0	0.0%	9
Hocking	1	50.0%	1	50.0%	0	0.0%	0	0.0%	2
Jackson	0	0.0%	1	100.0%	0	0.0%	0	0.0%	1
Lawrence	2	50.0%	2	50.0%	0	0.0%	0	0.0%	4
Meigs	2	40.0%	3	60.0%	0	0.0%	0	0.0%	5
Monroe	4	80.0%	1	20.0%	0	0.0%	0	0.0%	5
Morgan	0	0.0%	1	100.0%	0	0.0%	0	0.0%	1
Muskingum	1	33.3%	1	33.3%	1	33.3%	0	0.0%	3
Noble	*	*	*	*	*	*	*	*	*
Perry	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Pike	0	0.0%	2	100.0%	0	0.0%	0	0.0%	2
Vinton	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1
Washington	2	100.0%	0	0.0%	0	0.0%	0	0.0%	2
<b>Total</b>	<b>27</b>	<b>46.6%</b>	<b>28</b>	<b>48.3%</b>	<b>1</b>	<b>1.7%</b>	<b>2</b>	<b>3.4%</b>	<b>58</b>

Note: Responses are limited to participants who indicated working after the most recent child was born.

XXII. In what area were you employed after the birth of your most recent child? (If you worked more than one job, mark all that apply.)															
County	Fast Food, Restaurant		Manufacturing, Assembly, Factory		Retail Store		Education, Child Care, Schools, Daycare		Office, Administration		Healthcare (e.g., CNA, RN, Medical Office Assistant, etc.)		Other		Total Responses
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	
Adams	0	0.0%	0	0.0%	1	12.5%	2	25.0%	1	12.5%	4	50.0%	0	0.0%	8
Athens	1	33.3%	0	0.0%	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	3
Belmont	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Brown	2	28.6%	0	0.0%	3	42.9%	0	0.0%	0	0.0%	1	14.3%	1	14.3%	7
Clermont	0	0.0%	0	0.0%	2	50.0%	1	25.0%	0	0.0%	1	25.0%	0	0.0%	4
Gallia	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	2	33.3%	2	33.3%	6
Guernsey	1	8.3%	0	0.0%	0	0.0%	2	16.7%	1	8.3%	6	50.0%	2	16.7%	12
Hocking	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2
Jackson	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Lawrence	1	20.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	2	40.0%	1	20.0%	5
Meigs	1	20.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	1	20.0%	2	40.0%	5
Monroe	0	0.0%	0	0.0%	1	20.0%	2	40.0%	1	20.0%	1	20.0%	0	0.0%	5
Morgan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Muskingum	0	0.0%	0	0.0%	2	50.0%	0	0.0%	0	0.0%	1	25.0%	1	25.0%	4
Noble	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Perry	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1
Pike	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	2	66.7%	3
Vinton	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	1
Washington	0	0.0%	0	0.0%	1	33.3%	1	33.3%	1	33.3%	0	0.0%	0	0.0%	3
<b>Total</b>	<b>7</b>	<b>9.9%</b>	<b>1</b>	<b>1.4%</b>	<b>14</b>	<b>19.7%</b>	<b>10</b>	<b>14.1%</b>	<b>6</b>	<b>8.5%</b>	<b>19</b>	<b>26.8%</b>	<b>14</b>	<b>19.7%</b>	<b>71</b>

Note: Responses are limited to participants who indicated working after the most recent child was born; participants could choose multiple options.

<b>XXIII. Did you take maternity leave with your most recent child?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	3	37.5%	5	62.5%	8
Athens	2	100.0%	0	0.0%	2
Belmont	1	100.0%	0	0.0%	1
Brown	3	50.0%	3	50.0%	6
Clermont	1	33.3%	2	66.7%	3
Gallia	1	25.0%	3	75.0%	4
Guernsey	8	80.0%	2	20.0%	10
Hocking	2	100.0%	0	0.0%	2
Jackson	1	100.0%	0	0.0%	1
Lawrence	3	75.0%	1	25.0%	4
Meigs	3	60.0%	2	40.0%	5
Monroe	5	100.0%	0	0.0%	5
Morgan	*	*	*	*	*
Muskingum	3	100.0%	0	0.0%	3
Noble	*	*	*	*	*
Perry	1	100.0%	0	0.0%	1
Pike	1	33.3%	2	66.7%	3
Vinton	0	0.0%	1	100.0%	1
Washington	2	100.0%	0	0.0%	2
<b>Total</b>	<b>40</b>	<b>65.6%</b>	<b>21</b>	<b>34.4%</b>	<b>61</b>

*Note:* Responses are limited to participants who indicated working after the most recent child was born.

<b>XXIV. Length of Maternity Leave (in weeks)</b>				
<b>County</b>	<b>Average Weeks</b>	<b>Count</b>	<b>Minimum Weeks</b>	<b>Maximum Weeks</b>
Adams	8.3	3	6	13
Athens	12.7	3	10	16
Belmont	*	*	*	*
Brown	6.0	3	2	12
Clermont	6.0	1	6	6
Gallia	4.0	1	4	4
Guernsey	8.4	7	6	12
Hocking	10.5	2	9	12
Jackson	18.0	1	18	18
Lawrence	13.3	3	6	28
Meigs	8.7	3	6	12
Monroe	7.8	5	6	10
Morgan	*	*	*	*
Muskingum	6.5	2	6	7
Noble	*	*	*	*
Perry	12.0	1	12	12
Pike	14.0	1	14	14
Vinton	*	*	*	*
Washington	4.5	2	3	6
<b>Total</b>	<b>9.0</b>	<b>38</b>	<b>2</b>	<b>28</b>

*Note:* Responses are limited to participants who indicated taking maternity leave.

<b>XXV. Did your employer pay you while you were on maternity leave?</b>					
<b>County</b>	<b>Yes</b>		<b>No</b>		<b>Total Count</b>
	<b>Count</b>	<b>Percent</b>	<b>Count</b>	<b>Percent</b>	
Adams	0	0.0%	3	100.0%	3
Athens	0	0.0%	3	100.0%	3
Belmont	0	0.0%	1	100.0%	1
Brown	1	33.3%	2	66.7%	3
Clermont	0	0.0%	1	100.0%	1
Gallia	1	100.0%	0	0.0%	1
Guernsey	1	12.5%	7	87.5%	8
Hocking	2	100.0%	0	0.0%	2
Jackson	0	0.0%	1	100.0%	1
Lawrence	0	0.0%	3	100.0%	3
Meigs	0	0.0%	2	100.0%	2
Monroe	2	40.0%	3	60.0%	5
Morgan	*	*	*	*	*
Muskingum	0	0.0%	3	100.0%	3
Noble	*	*	*	*	*
Perry	1	100.0%	0	0.0%	1
Pike	0	0.0%	1	100.0%	1
Vinton	*	*	*	*	*
Washington	0	0.0%	2	100.0%	2
<b>Total</b>	<b>8</b>	<b>20.0%</b>	<b>32</b>	<b>80.0%</b>	<b>40</b>

*Note:* Responses are limited to participants who indicated taking maternity leave.