# VOICES OF RURAL MISSOURI MOTHERS: EXPLORING THE OPPORTUNITIES FOR INFORMAL EDUCATION EXPERIENCES OF BREASTFEEDING MOTHERS IN RURAL COMMUNITIES

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By

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

VOICES OF RURAL MISSOURI MOTHERS: EXPLORING THE OPPORTUNITIES FOR INFORMAL EDUCATION EXPERIENCES OF BREASTFEEDING MOTHERS IN RURAL COMMUNITIES

presented by Sara Bridgewater,

a candidate for the degree of Doctor of Philosophy,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Laura Zangori

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Tony Castro

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Valerie Bader

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Amy Lannin

# Dedication

To Harley,
When I first started talking about this dream—one that felt so far out of reach—you met me with, *"I think you should do this, you need to go for it."* From that moment on, you've been by my side. The path brought its share of challenges and sacrifices, but you remained my anchor and co-pilot on this incredible ride, especially while we were growing our family. The tough days were lighter, the victories sweeter, and I will always be grateful to chase every dream, big or small, with you. Thank you for being my rock.

To Teddy, Franklin, and Lucy,
When I began this journey, Teddy, you were there from the start, keeping me company through every late-night study session and every word of encouragement I whispered to myself. As time went on, Franklin and Lucy joined us, and you three became my most loyal study buddies—often nestled on my lap as I worked, or quietly by my side as I juggled nursing and attending class online with a newborn. Each of you made those moments more bearable and filled them with love.

No degree or achievement will ever compare to the honor of being your mama. You are the heartbeat of my existence, and I will always do everything in my power to make your lives better, brighter, and filled with joy. My family is my heart, and my kids are its center.

To my Mom and Dad,
Thank you for your unwavering belief in me. Your love, guidance, and encouragement have shaped me into who I am today. You've taught me the importance of hard work, resilience, kindness, and integrity. Your constant support has been my anchor, and your sacrifices made this journey possible.

This achievement is a reflection of everything you've given me, and I am forever grateful.

To our village,
Thank you for being there when we needed you most. Your support made all the difference, especially on those days when the balance between family, work, school, and life felt impossible. Whether it was stepping in to help when one of the kids was sick or offering a helping hand in countless other ways, you made it possible for me to keep going. Sometimes, it was your encouragement that meant the difference between an assignment being submitted or not, and for that, I am beyond grateful.

We couldn't have done this without you.

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To Sarah Davis, thank you for your steadfast support and expertise in maternal health. From the start, your guidance, encouragement, and collaborative spirit have shaped this project. I look forward to seeing how this pilot continues to grow and impact maternal health.

To my colleagues at the University of Missouri Extension, thank you for your constant encouragement, support, and friendship throughout this journey. Your belief in me has been a driving force, and I am so grateful to have had the opportunity to work alongside such a talented and supportive group of individuals.

To all the mamas, especially the ones who participated in this study—thank you. Your strength, resilience, and determination continue to inspire me. You are the reason this work matters. You remind me every day that we can always do better for mothers and families, and that we must continue to create solutions and support systems that nurture all layers of maternal health. Your voices are vital, and I am honored to have had the opportunity to learn from you. Finally, thank you to all the mothers out there—whether in the trenches of daily life or striving for change in maternal health—your perseverance, love, and dedication are what fuel this work. This journey was never just for me; it was for all of you.

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**Voices of Rural Missouri Mothers: Exploring the Opportunities for Informal Education Experiences of Breastfeeding Mothers in Rural Communities**

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## Abstract

Breastfeeding offers well-documented health benefits, yet mothers in rural areas often face unique barriers that impact initiation and continuation. This mixed-methods study explored the breastfeeding experiences of mothers in rural Missouri using the Social Ecological Model, with a focus on how informal education and support systems influence breastfeeding outcomes. Quantitative data were gathered through surveys, while qualitative data were obtained via in-depth interviews with mothers from three rural counties. Findings indicate that while personal motivation and informal support networks—such as family, peers, and social media—play a critical role in sustaining breastfeeding, systemic barriers persist. These include limited healthcare access, weak enforcement of breastfeeding-related policies, and minimal workplace accommodations. Participants emphasized the need for greater access to local breastfeeding education, stronger community resources, and consistent policy implementation tailored to rural contexts. The study highlights the complex, multi-level influences on breastfeeding practices and underscores the importance of community-specific interventions to promote equitable breastfeeding support in underserved areas.

**Keywords**: breastfeeding, rural health, Social Ecological Model, informal education, maternal health, Missouri, maternity care desert

# CHAPTER 1: INTRODUCTION

Breastfeeding offers numerous health benefits for both infants and mothers. For infants, breastfeeding has been associated with a reduced risk of asthma, obesity, Type 1 diabetes, severe lower respiratory infections, otitis media, gastrointestinal infections, and necrotizing enterocolitis in preterm infants (CDC, 2023). Additionally, breastfed infants may experience cognitive advantages, such as a lower risk of dental malocclusion and potentially higher intelligence quotients (Peres et al., 2015). Women in rural Missouri face distinct breastfeeding and postpartum experiences compared to their urban counterparts (Brooks & Tray, 2023). These differences stem from a range of factors, including access to healthcare, cultural norms, and socioeconomic conditions. Understanding these disparities is essential, particularly in exploring breastfeeding initiation and continuation rates, which reveal the supports—or lack thereof—available to mothers in differing environments.

There is limited access to healthcare in rural Missouri in which approximately 50% of Missouri counties are designated as maternity care deserts (March of Dimes, 2021). As a result of a lack of health care, Missouri consistently ranks among the lowest states for maternal health outcomes. It was ranked 50th for women's health in 2018 and 45th in 2020 (Barnas, 2021). In 2019, it ranked 44th in the nation for maternal mortality (Barnas, 2021). Key challenges affecting Missouri mothers include high rates of smoking during pregnancy, elevated mental distress, and residential segregation (Forward Pathway, 2024). Compounding these issues is the rural nature of much of the state in which nearly 27% of new mothers lack access to maternal educational resources (Barnas,

2021). For rural women, this often means traveling long distances for maternal care—if transportation is even available.

Due to a lack of health care access, rural Missouri mothers navigate unique challenges that can hinder breastfeeding initiation and continuation. Barriers include difficulties with lactation and latching, concerns about infant nutrition and weight, maternal worries about medication use while breastfeeding, unsupportive work policies, lack of parental leave, cultural norms, limited family support, and inconsistent hospital practices (CDC, 2023). Access to healthcare is among the most critical factors. Many rural communities have limited medical facilities, and those that do exist may not provide comprehensive prenatal and postnatal services. The scarcity of healthcare providers, particularly lactation consultants, further limits breastfeeding support. Without local experts or support groups, mothers often face breastfeeding difficulties alone.

Cultural beliefs also influence breastfeeding practices. Societal norms may not favor or even normalize breastfeeding, particularly in public spaces. Unlike urban settings—where breastfeeding is often visible and supported—rural communities may lack this cultural reinforcement. These attitudes can erode maternal confidence and dissuade women from seeking help or continuing breastfeeding, even when they wish to do so. In addition, socioeconomic conditions prevalent in rural communities create additional hurdles. In Missouri, 12.8% of the population lives below the poverty line. (Missouri Department of Health and Senior Services, 2023). However, rural counties experience disproportionately higher poverty rates, with 15.4% of rural residents living in poverty compared to 11.5% in urban areas (Missouri Department of Health and Senior Services, 2023). This financial hardship limits many rural Missouri families' access to

essential resources, including nutritious food and prenatal care. Due to financial constraints, women may need to return to work quickly after childbirth due to financial necessity, which disrupts efforts to establish and sustain breastfeeding. For these women, support systems at the workplace—or the lack thereof—play a significant role in whether breastfeeding can continue.

Despite healthcare access, cultural, and financial barriers, many rural mothers find ways to initiate and sustain breastfeeding. How they navigate these barriers reveals their self-efficacy in locating support, resources, and information. Understanding not only the challenges but also their strategies and support within breastfeeding provides leverages to future interventions. The Social Ecological Model offers a powerful framework for understanding the complex and interconnected factors influencing breastfeeding self-efficacy in rural communities. This model recognizes that behavior is shaped not just by individual choices but also by relationships, community dynamics, and broader societal forces. Using this lens, the study examines how these multiple levels of influence affect rural mothers' self-efficacy for initiating and sustaining breastfeeding.

## Problem Statement

Breastfeeding is not solely a biological function; it is a profoundly psychological, emotional, and social experience, intricately linked to a mother's identity, resilience, and sense of agency. (Leeming et al., 2021; Wheeler et al., 2023). The Missouri Breastfeeding Report (2023) indicates that, within the state of Missouri, breastfeeding initiation rate is 79.7%, compared to the U.S. national rate of 84.1%. In addition, breastfeeding initiation and duration rates in Missouri vary by geographic variation, such as rural, suburban, and urban. According to the

Centers for Disease Control and Prevention (CDC, 2023), rural Missouri counties, which are defined as one with a population density of fewer than 150 people per square mile and that does not include any portion of a central city within a Metropolitan Statistical Area (Health in Rural Missouri Biennial Report, 2022-2023), have reported initiation rates as low as 39%, while urban Missouri counties report rates as high as 88%.

More concerning is the significant decline in exclusive breastfeeding after six months within rural Missouri counties, in which the breastfeeding rate drops to 24.6%. This disparity underscores the need for targeted interventions to inform women of the health benefits to themselves and their babies, as well as consider the constraints in breastfeeding continuation faced by rural Missouri communities.

Mothers in rural Missouri face unique and systemic challenges in breastfeeding, stemming from limited healthcare access, cultural norms, and economic constraints. These conditions contribute to lower breastfeeding initiation and continuation rates compared to urban populations. Since rural areas tend to be maternal health deserts, women have little support across systems they encounter. There is a lack of health care professionals to discuss difficulties with latching and milk production, concerns about infant nutrition and weight gain, anxieties related to medication use while breastfeeding, and limited access to lactation support. In addition, within the workplace, there is a lack of knowledge and/or cultures to enforce federal and state laws related to breastfeeding, lack of workplace policies, inadequate parental leave, and unsupportive cultural work place norms. Finally, due to a lack of knowledge and resources for breastfeeding

across family generations and communities, new mothers experience insufficient family or social support (CDC, 2023). Addressing these barriers requires a comprehensive, multi-level approach that engages healthcare systems, employers, families, and local communities.

There is a significant gap in the literature concerning breastfeeding in rural Missouri. While research often highlights challenges, less is known about what supports mothers in these environments — particularly how informal education, personal networks, and community resources affect breastfeeding outcomes. Despite Missouri's troubling maternal health rankings and widespread designation of maternity care deserts, there is limited research specifically focused on if, how, and where new mothers in rural communities find information and build self-efficacy for breastfeeding. This study aims to examine how multilevel factors — including individual, family, community, and policy influences — shape their experiences and breastfeeding outcomes. This study uses quantitative (survey) and qualitative (interviews) methods and data, to consider how resources, support, and challenges exist across the Social Ecological Model affect women's self-efficacy for breastfeeding.

## Purpose of the Study

The purpose of this study is to explore the factors that influence whether rural Missouri mothers continue or cease breastfeeding, through the lens of the Social Ecological Model. This includes examining the role of social networks, local communities, healthcare access, employer accommodations, and broader policy structures.

This study is guided by two core research questions:

1. What Social Ecological Model (SEM) layers do rural Missouri women identify as impacting their breastfeeding behaviors and outcomes? Are the SEM layers within the state the same as within two rural focal counties (Bates and Vernon)?
2. How do the SEM layers individually and/or collectively impact breastfeeding behaviors and duration?

By focusing on these questions, this study aims to uncover the complex and dynamic factors that shape breastfeeding in rural communities, including the obstacles women face and the supports that make success possible. In addressing these questions, I hope to explore affordances, and barriers across a multifaceted approach that involves healthcare providers, employers, families, and communities.

## Positioning Myself

To offer transparency and context, I share my personal and professional background. I am a Nutrition and Health Field Specialist with the University of Missouri Extension, serving the rural counties of Bates, Vernon, and Cass through health and wellness programming. I was born just across the Missouri state line in Kansas—the closest hospital available to families in the rural area where my mother lived.

I grew up in rural Missouri: there are more cows than people, and more gravel roads than blacktop. It is a place where I know everyone and, in my case, I am also related to almost everyone within the surrounding area. I attended K–12 school in Bates County and graduated from Hume High School. My mother has

worked—and still works—for the small rural school district that I attended, while my dad went straight from high school into full-time farming on the family farm, where he continues to farm. I attended Missouri State University and majored in Health Services; I hold a M.S in public health. I attempted to move out of my small rural area and chose to live in Kansas City for one year before moving back to Bates County. My fiancé (now husband) and I knew this was where we wanted to plant our roots.

I always felt that rural life was where I belonged, and serving the community that raised me is deeply important to me. I began working with MU Extension in May of 2018. My husband and I purchased his grandparents' home, located on a country road in Vernon County, with Bates County across the road from me. I returned to Bates and Vernon Counties to make a positive impact on the region.

As a mother of three, I have firsthand experience with the joys and challenges of breastfeeding in a rural setting. I breastfed my two sons for over two years each and I am currently breastfeeding my daughter with the same goal. These experiences, combined with my professional role in MU Extension, give me a unique perspective and connection to the mothers participating in this study. My aim is to authentically capture their voices and stories in a way that brings both credibility and empathy to this research.

## Organization of the Dissertation

This dissertation is organized into five chapters, each providing a comprehensive overview of the research process and findings related to the

breastfeeding experiences of rural Missouri mothers. Chapter 1 (Introduction) introduces the research problem, outlines the purpose and significance of the study, and presents the guiding research questions. It also includes a statement of the researcher's positionality and the relevance of the Social Ecological Model as the study's theoretical framework.

Chapter 2 (Literature Review) summarizes existing research on breastfeeding practices, with a specific focus on rural-urban disparities, maternal health outcomes in Missouri, and the influence of social determinants of health. This chapter also reviews relevant applications of the Social Ecological Model and highlights gaps in the literature that justify the need for this study.

Chapter 3 (Method) describes the study's design, including participant recruitment, data collection procedures, and data analysis strategies. A mixed-methods approach is outlined, incorporating both survey and interview data. The chapter also includes a discussion of ethical considerations and the researcher's relationship to the study population.

Chapter 4 (Findings) presents the study's results in alignment with the research questions. The chapter begins with an overview of participants' breastfeeding experiences and the role of informal education, such as community-based support groups and family guidance. It then explores the influence of various levels of the Social Ecological Model—individual, interpersonal, community, and societal—on these experiences. Both quantitative and qualitative findings are presented.

Chapter 5 (Discussion) interprets the findings in relation to the existing literature and theoretical framework. It discusses the implications of informal education and multi-level supports on breastfeeding outcomes, with a focus on the unique challenges faced by rural mothers. The chapter also identifies practical recommendations for healthcare providers, policymakers, and community organizations, as well as limitations of the study and suggestions for future research.

## Chapter 2: LITERATURE REVIEW

Breastfeeding has historically been the primary method of infant nourishment and universally practiced across civilizations due to its biological necessity and social centrality. In ancient cultures, breastfeeding was not only seen as natural but was also strongly associated with maternal identity and responsibility (Fildes, 1986). As societies became class structured, it became unfashionable for elite and wealthy women to breast feed. Therefore, they delegated child-rearing to wet nurses who were employed as, or forced through means such as indentured servants or slavery, to breastfeed infants. Therefore, breastfeeding became associated with absence of wealth and a lower social class rather than a medical need. For many women, however, breastfeeding was a matter of infant survival. For these women, knowledge about feeding practices was passed down through generations within families and communities.

Significant changes in breastfeeding practices emerged during the 18th and 19th centuries in Western society. The rise of industrialization altered family structures and maternal roles. As more women entered the workforce, particularly in urban environments, they found it increasingly difficult to breastfeed due to inflexible labor demands and lack of maternity protections. Simultaneously, medical professionals began to exert greater influence over childbirth and infant care, replacing midwives and traditional caregivers, that were women driven professions, with physicians who were typically male that promoted scientific management of child-rearing (Davis-Floyd, 2021). In this context, breastfeeding was no longer solely governed by maternal instinct or familial support; it was reframed as a process to be monitored, scheduled, and medically supervised.

The early 20th century marked a critical turning point with the commercial production of infant formulas. Initially developed for infants who could not be breastfed due to maternal illness or orphanhood, formula was quickly repositioned as a modern and hygienic alternative to breastmilk (Apple, 1987). Public health campaigns and pediatric advice began to recommend formula feeding as preferable, especially in industrialized nations where sanitation, refrigeration, and access to healthcare varied. Mothers were told that formula was more consistent and nutritionally adequate than human milk, which was believed to vary in quality and be affected by the mother's emotional or physical state (Hausman, 2003). This medical endorsement coincided with cultural narratives that associated breastfeeding with poverty and lack of modern knowledge, while formula use was linked with progress, science, and upward mobility.

Educational materials and medical advice during this era reflected a deeply paternalistic tone. Physicians and nurses provided detailed instructions for formula preparation, feeding schedules, and bottle sterilization, while mothers were taught to suppress on-demand feeding instincts and adhere strictly to time-based routines (Palmer, 2009). Breastfeeding, in contrast, was often discouraged, especially among middle- and upper-class women, who were expected to embrace modernity and efficiency. As a result, maternal autonomy in infant feeding diminished, and generations of women grew up without exposure to breastfeeding as a normative practice.

The post–World War II baby boom further accelerated the decline in breastfeeding, particularly in North America and Europe. Aggressive formula

marketing by companies such as Nestlé and Mead Johnson capitalized on a growing trust in scientific authority and the consumer culture of the 1950s and 1960s (Palmer, 2009). This led to a generational gap in breastfeeding knowledge, especially in low-income and minority communities where formula became deeply entrenched due to institutional practices and limited breastfeeding support.

A significant cultural and scientific shift began in the 1970s. Amid rising awareness of the limitations of formula and growing concerns about infant mortality and malnutrition in developing countries, breastfeeding advocacy re-emerged. International campaigns such as the World Health Organization (WHO) /United Nations International Children's Emergency Fund United Nations International Children's Emergency Fund (UNICEF) Baby-Friendly Hospital Initiative and grassroots movements like La Leche League International emphasized the biological, emotional, and economic advantages of breastfeeding (La Leche League International, 2023). Research began to validate traditional maternal knowledge, showing that breastmilk provides immunological protection, fosters secure mother-infant attachment, and reduces the risk of chronic illness (Labbok, 2001). *Maternal knowledge*, as used in this context, refers to the collective wisdom, practices, and beliefs passed from mother to mother across generations. Rooted in both lived experience and cultural tradition, this form of knowledge extends beyond technical or task-based learning (e.g., feeding schedules or infant care routines) to encompass the emotional, social, and identity-forming aspects of motherhood. Drawing on Mercer's *Maternal Role Attainment Theory* (1986), maternal knowledge is understood as integral to the

development of maternal identity—how a woman comes to know herself as a mother through relationships, modeling, and shared experience. Within this framework, maternal knowledge represents a sacred and relational form of education, one transmitted through storytelling, observation, and mutual support among women, shaping beliefs and practices surrounding childrearing, breastfeeding, and care. Educational models also began to shift—moving away from prescriptive, male-dominated discourse and toward empowering mothers through experiential learning, peer support, and individualized counseling.

Today, maternal education on breastfeeding integrates both biomedical and psychosocial approaches. Healthcare providers promote immediate skin-to-skin contact and early initiation of breastfeeding, while lactation consultants use models of maternal self-efficacy to build confidence and provide tailored support (Dennis, 2006). Nevertheless, the legacy of formula feeding continues to shape contemporary attitudes, particularly in communities where breastfeeding was lost as a cultural norm due to earlier medical and marketing practices. Understanding the historical trajectory of infant feeding—and how mothers were systematically taught to devalue breastfeeding—remains crucial for developing culturally sensitive, effective breastfeeding interventions today.

**Breast-feeding Self-Efficacy**

A woman's confidence in her ability to breastfeed is an important psychological factor that influences her decision to initiate breastfeeding, continue over time, and exclusively breastfeed her baby (Ngo et al., 2019). Self-efficacy is drawn from Bandura's (1986) social cognitive theory on human functioning.

Bandura's (1997) social cognitive theory defines self-efficacy as *"the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations"* (p. 3). In the context of breastfeeding, it reflects a mother's confidence in her capacity to initiate and sustain breastfeeding practices, even in the face of challenges. Bandura proposes that there is a reciprocal influence of behavior, the environment, and personal factors (e.g., beliefs, knowledge) that impact an individual's self-efficacy, which shapes their behavior and performance.

Self-efficacy is more than knowledge and skills; it is an individual's belief in themselves that they can perform and accomplish a task. This belief significantly influences their performance and behavior (Bandura, 1977; Bandura, 1997). Their belief in their ability to initiate and accomplish the task plays a vital role in shaping behaviors, motivation, and emotion responses towards the task (Bandura, 1997)

Bandura's (1977) theory of self-efficacy posits that individuals are more likely to engage in behaviors they believe they can successfully perform. High self-efficacy not only supports breastfeeding initiation but also enhances a mother's persistence in the face of challenges. Mothers with strong self-efficacy are more likely to confront and address common breastfeeding difficulties such as latching issues, perceived insufficient milk supply, or social stigma (Dennis, 1999; Otsuka et al., 2008). They tend to seek guidance, adapt strategies, and persevere, driven by an intrinsic motivation that reflects a deeper form of maternal self-preservation (Değer et al., 2023; Blyth et al., 2002).

### *Sources of Self-Efficacy*

Bandura (1997) outlines four sources that influence an individual's self-efficacy. These are mastery experiences, vicarious experiences, social persuasions, and physiological and emotional states. Research defines these four sources as critical for material breastfeeding (Dennis, 1999; Ghasemi et al., 2019). Below, I describe each source.

**Mastery Experiences**: Bandura defines mastery experiences as the most powerful source of self-efficacy, emphasizing that successfully overcoming challenges builds a strong belief in one's ability to perform similar tasks in the future (Bandura, 1977). These experiences involve direct, personal achievements that reinforce competence and demonstrate that effort leads to success, making them more influential than secondhand observations or verbal encouragement (Akhtar, 2008; Smith, 2002; Vroom, 1964). Maternal self-efficacy refers to a mother's belief in her ability to successfully breastfeed her child. Research finds this source as a critical factor influencing breastfeeding outcomes. Programs designed to strengthen breastfeeding self-efficacy through education, skill-building, peer support, or individualized counseling—have shown promising outcomes. Dennis (2006) demonstrated that structured, self-efficacy-based interventions significantly extended breastfeeding duration.

**Vicarious Experiences:** These are instrumental in shaping self-efficacy beliefs, particularly in tasks that are new or unfamiliar (Bandura,1997). Vicarious experiences are—observing others successfully performing a behavior—play a significant role in developing self-efficacy (Bandura, 1997). Bandura (1986)

emphasized the power of vicarious experiences and the role of verbal encouragement in enhancing self-efficacy, strategies that are especially critical in rural areas where access to professional support is limited. In the context of breastfeeding, vicarious learning occurs when expectant or new mothers observe peers, family members, or support group participants breastfeeding successfully. These experiences help build confidence and can shape expectations and problem-solving approaches related to breastfeeding (Dennis, 1999).

For example, attending peer support groups or prenatal classes where women share their breastfeeding journeys can enhance a mother's belief in her own ability to breastfeed. This is particularly effective when the observed models are perceived as similar to the observer (Bandura, 1997), such as fellow mothers in the same age group, cultural background, or community. For instance, a study by Dennis (2006) demonstrated that a breastfeeding self-efficacy intervention led to increased breastfeeding duration among participants. Moreover, providing opportunities for mothers to observe successful breastfeeding experiences (vicarious experiences) and offering verbal encouragement can further enhance self-efficacy (Bandura, 1986).

**Social Persuasion:** Social persuasion involves receiving verbal encouragement or supportive feedback that enhances one’s belief in their ability to perform a specific behavior (Bandura, 1997). In breastfeeding, social persuasion can come from a variety of sources—lactation consultants reassuring a new mother that she is producing enough milk, a partner expressing confidence in her ability to breastfeed, or peer counselors sharing affirmations and emotional

support. Such messages can have a powerful impact, particularly when they come from trusted or authoritative sources. Positive reinforcement may reduce anxiety and build resilience when breastfeeding challenges arise (Dennis, 1999; Brockway et al., 2017). Conversely, lack of support or negative commentary can erode self-efficacy and contribute to early breastfeeding cessation.

As Palmer et al. (2010) observed, breastfeeding is often deeply entwined with social persuasion of what it means to be a "good mother," which can add both motivation and emotional pressure. Thus, breastfeeding becomes more than a source of nourishment—it functions as a mechanism for identity preservation, especially when that identity is challenged by physical discomfort, exhaustion, or judgment. For many rural mothers, the choice to continue breastfeeding despite adversity becomes an intentional act of emotional and psychological resilience—a way to reclaim agency during a vulnerable life stage (Hannon et al., 2022).

In this context, informal education and community-based peer support play a crucial role in reinforcing maternal self-efficacy and persistence. Mothers who are surrounded by supportive role models—whether family, friends, or peers—often report greater confidence and breastfeeding success (Grassley & Nelms, 2008). In this sense, breastfeeding self-preservation is not solely an individual endeavor but also a collective practice, sustained through mentorship, shared experience, and cultural tradition. These informal networks help counterbalance negative messaging and fill gaps in formal care, emphasizing on the interaction between individual capacity and the broader social environment.

**Physiological And Emotional States.** Bandura (1997) identified physiological and emotional states as the physical sensations and emotional reactions individuals associate with performing a behavior. In breastfeeding, a mother's interpretation of her bodily responses—such as fatigue, pain, hormonal changes, or stress—can significantly influence her confidence in her ability to breastfeed. Importantly, these physiological and emotional cues are not just raw sensations but are interpreted through the lens of personal belief and context. For instance, if a mother experiences anxiety, exhaustion, or physical discomfort during breastfeeding, she may perceive these responses as signs that she is not capable or that breastfeeding is too difficult. This can reduce her breastfeeding self-efficacy and increase the likelihood of early weaning. However, positive emotional states—such as relaxation, comfort, and a sense of bonding—can reinforce the belief that she is competent and that breastfeeding is manageable and rewarding.

Maternal self-efficacy remains vulnerable to emotional and psychological strain. Mental health conditions such as postpartum depression and anxiety can significantly diminish self-efficacy, impeding both breastfeeding behaviors and maternal well-being. Mothers experiencing depressive symptoms often struggle with confidence, energy, and emotional regulation, which can compromise their ability to initiate or maintain breastfeeding (Ahmadinezhad et al., 2024). However, those with higher self-efficacy and access to supportive environments are more likely to manage emotional stress and achieve their feeding goals.

Socioemotional competencies—such as resilience, perspective-taking, and self-advocacy—can serve as protective factors, promoting both maternal and infant health (Royal Foundation Centre for Early Childhood, 2025). Supportive environments, reassurance from others, and stress-reduction techniques can help mothers reframe negative sensations and promote a more confident breastfeeding experience (Dennis, 1999).

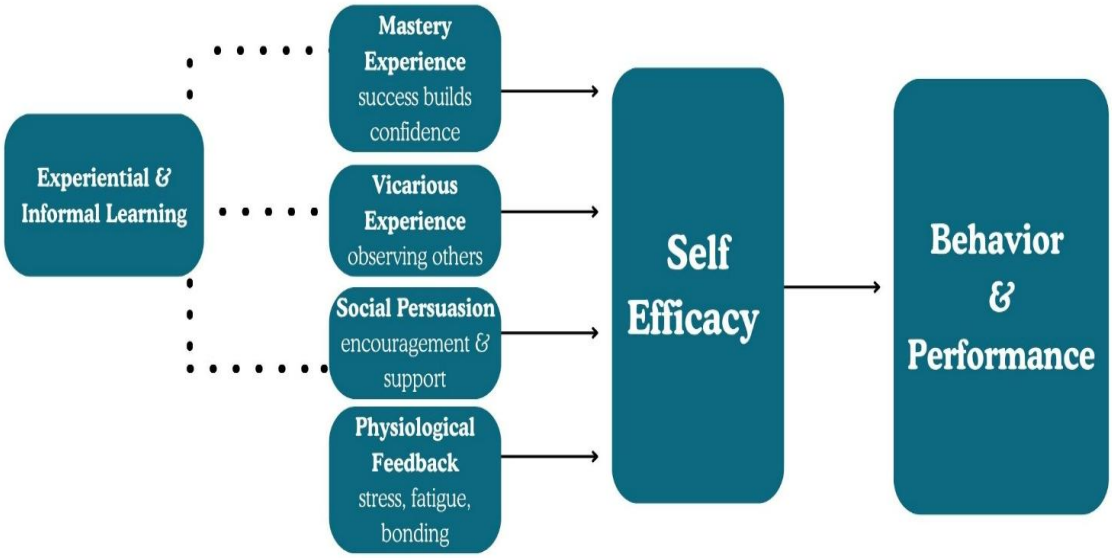
**Self-Efficacy Interventions**

Interventions designed to enhance breastfeeding self-efficacy have demonstrated measurable success in improving breastfeeding initiation, duration, and exclusivity. These interventions often include structured education, peer counseling, professional lactation support, and skill-building components tailored to increase a mother's confidence and competence in breastfeeding (McQueen et al., 2011; Brockway et al., 2017). For example, McQueen and colleagues (2011) found that a prenatal breastfeeding self-efficacy intervention significantly increased exclusive breastfeeding rates at six weeks postpartum. Similarly, Brockway et al. (2017) reported that postpartum interventions combining home visits and telephone support improved maternal self-efficacy and breastfeeding outcomes. Importantly, these strategies must engage across a mother’s ecological context—including individual, interpersonal, institutional, and community levels. In rural areas, where geographic isolation and limited healthcare infrastructure can reduce access to breastfeeding support, multilevel interventions are particularly crucial. Programs that incorporate peer support networks, integrate breastfeeding education into primary care, and utilize telehealth for lactation

consultation have shown promise in addressing rural disparities (Otsuka et al., 2014; Guo et al., 2022). Such holistic approaches, grounded in the Social Ecological Model, recognize that sustainable breastfeeding support requires reinforcing confidence and capability across a mother's environment.

**Figure 1**

**Note.** Adapted from "Self-Efficacy," by S. McLeod, 2023, *Simply Psychology*. Changes made to go with study.




**Social Ecological Model (SEM)**

Breastfeeding outcomes are influenced by a complex interplay of individual, interpersonal, community, and societal factors. These factors encompass geography, age, ethnicity, income, employment, education, healthcare access, availability of educational resources, and family and community attitudes (Stough et al., 2019). Understanding these influences is crucial for addressing

disparities in breastfeeding initiation and duration, particularly in rural areas where challenges may be more pronounced.

**Socio-Ecological Model**

**Figure 2**

*Social Ecological Model*

Note. Adapted from Golden & Earp (2022).


The Social Ecological Model (SEM), Figure 2, offers a multilayered framework for understanding these influences—ranging from individual beliefs and interpersonal relationships to broader community norms, organizational practices, and public policy (McLeroy et al., 1988). The Social Ecological Model (Bronfenbrenner, 1979) is a theoretical framework that emphasizes the interconnected systems shaping human development and behavior across nested environmental levels. The levels were designed to illustrate how health behaviors

are influenced not only by individual factors but also by the social and structural environments in which individuals live. This model sheds light on the five levels of influence—individual, interpersonal, community, organizational, and policy—used to guide the analysis of breastfeeding experiences in rural Missouri.

**Individual**

Breastfeeding behaviors are shaped by a multifaceted interplay of individual, biological, and sociodemographic factors that influence a mother's decision to initiate, continue, or discontinue breastfeeding. These factors not only reflect personal beliefs and circumstances but are also embedded within broader social, cultural, and environmental contexts. In rural Missouri, where access to healthcare resources may be limited and cultural norms distinct, understanding these influences is vital to promoting and sustaining breastfeeding.

At the individual level, maternal knowledge and attitudes play a foundational role in shaping breastfeeding behavior. Mothers who are informed about the benefits of breastfeeding, familiar with effective techniques, and aware of potential challenges are more likely to initiate breastfeeding and sustain it over time. Positive attitudes and accurate information have been linked to increased breastfeeding duration, while misinformation or lack of education—particularly prevalent in areas with limited healthcare access—can result in early formula supplementation or cessation (Dennis, 2002; Dennis, 2006; Dennis & Faux, 1999; Li et al., 2005). Furthermore, maternal self-efficacy, or a mother's belief in her ability to breastfeed successfully, is a significant predictor of breastfeeding outcomes. Mothers with high self-efficacy tend to approach breastfeeding with

greater confidence, enabling them to manage difficulties more effectively (Odom et al., 2013). These psychological factors are closely tied to perceived social norms and support systems, which can either reinforce or undermine maternal motivation.

Mental health is another crucial component that interacts with breastfeeding behavior. Postpartum depression (PPD), anxiety, and stress can negatively impact both the initiation and duration of breastfeeding. Mothers experiencing depressive symptoms often struggle with motivation, fatigue, and feelings of inadequacy, all of which can inhibit breastfeeding success (Dennis & McQueen, 2009; Bonacquisti et al., 2020). Conversely, breastfeeding itself may serve as a protective factor against PPD by promoting the release of oxytocin, which facilitates emotional bonding and stress reduction (Feldman et al., 2007). These findings highlight the importance of integrating mental health support into breastfeeding interventions, especially in rural settings where access to behavioral health services may be constrained.

Closely related to psychological resilience are self-preservation behaviors, such as adaptive coping and perseverance. Mothers who demonstrate resilience in the face of breastfeeding difficulties are more likely to continue breastfeeding despite physical or social challenges (Borra et al., 2015). These coping strategies can be nurtured through targeted education, peer support, and empowerment-oriented programming that prepares mothers for common obstacles and reinforces their capacity to overcome them.

Biological and physical factors also play a direct role in influencing breastfeeding outcomes. A mother's health status, prior breastfeeding experience, and physiological conditions can all affect her ability to breastfeed effectively. For instance, medical conditions such as diabetes or obesity have been associated with delayed lactogenesis and reduced milk supply (Nommsen-Rivers et al., 2010). Physical challenges like inverted nipples or an infant's tongue-tie may interfere with latching and milk transfer, often necessitating specialized lactation support (Kent et al., 2015). Mothers who have breastfed successfully in the past generally report fewer difficulties with subsequent children, as previous experience helps reduce anxiety and builds practical skill (Thulier & Mercer, 2009). These findings suggest that continuity of care and postnatal follow-up are essential for supporting mothers with unique physiological concerns.

Sociodemographic characteristics intersect with individual and biological factors to further shape breastfeeding decisions. Age, education level, income, and employment status are consistently associated with breastfeeding outcomes. Younger mothers and those with lower educational attainment tend to face more barriers, including limited access to information and resources (Centers for Disease Control and Prevention [CDC], 2020). In rural communities, economic constraints and lack of supportive workplace policies can create additional obstacles to continued breastfeeding (Hawkins et al., 2007). Employment conditions, such as inflexible schedules and absence of lactation accommodations, may force mothers to supplement with formula or cease breastfeeding prematurely.

Cultural beliefs and values also influence individual breastfeeding behavior. In rural Missouri, prevailing norms around modesty, gender roles, and infant feeding may affect a mother's comfort with breastfeeding in public or among peers. For some mothers, deeply held values related to health, natural living, and attachment parenting may reinforce the decision to breastfeed exclusively, despite facing structural or interpersonal challenges (Grassley & Eschiti, 2008). These cultural dynamics highlight the importance of culturally responsive education and support systems that affirm maternal choices and reduce stigma.

Moreover, a mother's intention to breastfeed, often formed during pregnancy, has been shown to be one of the strongest predictors of actual breastfeeding behavior. Mothers who plan to breastfeed are generally more likely to seek support, persevere through difficulties, and remain committed to exclusive breastfeeding for longer durations (Dennis, 2002). Prenatal counseling and early education efforts are therefore critical in shaping expectations and enhancing maternal readiness for the breastfeeding journey.

Together, these individual-level determinants illustrate the complexity of breastfeeding behaviors and underscore the need for interventions that are not only evidence-based but also responsive to the lived experiences of rural mothers. By addressing knowledge gaps, supporting mental and physical health, and accounting for cultural and economic contexts, healthcare providers and policymakers can better support mothers in achieving their breastfeeding goals.

## Interpersonal Level

**Familial Relationships** Support from partners, family members, and peers significantly affects a mother's breastfeeding self-efficacy (Blyth et al., 2002). For instance, mothers who receive regular encouragement and practical assistance from their social networks are more likely to continue breastfeeding. Familial relationships represent one of the most powerful social influences on breastfeeding initiation, duration, and overall success. In rural Missouri and similar communities, family members often serve as a primary source of emotional reinforcement, practical support, and informal guidance, all of which contribute meaningfully to a mother's breastfeeding experience. The nature and extent of familial involvement can either reinforce a mother's motivation and capacity to breastfeed or introduce barriers that undermine her efforts and lead to premature weaning.

Among these relationships, the role of partners or spouses is especially consequential. Supportive partners who share in household responsibilities and actively encourage breastfeeding create an environment that promotes breastfeeding persistence. When fathers are educated on the benefits and logistics of breastfeeding, maternal breastfeeding rates significantly increase (Arora et al., 2000; Sherriff & Hall, 2011). Conversely, partners who are indifferent or hold negative attitudes toward breastfeeding may weaken maternal resolve, contributing to earlier cessation (Sriraman et al., 2015). This dynamic is particularly relevant in rural Missouri, where traditional gender roles may still influence household interactions. Involving fathers in breastfeeding education and

support programs can therefore be a critical strategy in enhancing family-based encouragement and creating a culture of shared responsibility (Hosking et al., 2025).

Extended family members, particularly grandmothers, also exert substantial influence over infant feeding practices. Their prior experiences and beliefs about breastfeeding can shape maternal decision-making, either by offering reassurance and validation or by introducing doubt and misinformation. In many cases, grandmothers provide practical tips and emotional support rooted in their own breastfeeding histories, which can empower and motivate new mothers (Radzymunski et al., 2016). However, family members may also unintentionally undermine breastfeeding through the promotion of outdated practices or cultural misconceptions—such as beliefs that breast milk alone is insufficient or that early introduction of formula or solids is necessary. These perspectives are especially prevalent in multigenerational households common in rural communities, where the influence of extended family members may be magnified (Flower et al., 2008).

The importance of emotional and practical support from family members cannot be overstated. Emotional encouragement from close relatives helps reduce maternal stress and anxiety, both of which are closely linked to breastfeeding outcomes (Modak et al., 2023). Such support enhances maternal self-efficacy, a well-documented predictor of breastfeeding success (Dennis, 1999). In addition to emotional reinforcement, practical support—such as assistance with chores, infant care, or breastfeeding technique—can ease physical and psychological burdens,

enabling mothers to focus on their breastfeeding goals (Thulier & Mercer, 2009). In rural areas, where access to professional lactation consultants may be limited, familial assistance often serves as the first and most immediate source of help for breastfeeding mothers (Goodman et al., 2016).

Despite these benefits, familial relationships can also pose significant barriers. Cultural traditions or generational beliefs may lead family members to encourage early supplementation or weaning, sometimes in direct opposition to a mother's intentions. Such conflicts can create tension and emotional stress, which may interfere with breastfeeding continuity (Naylor & Morrow, 2001). Additionally, in families with limited breastfeeding history or past difficulties, new mothers may lack role models or feel discouraged, especially if formula feeding is seen as the norm. The absence of supportive familial precedent can erode maternal confidence and increase the likelihood of early cessation (Susin & Giugliani, 2008).

To counteract these challenges, targeted strategies that involve family members in breastfeeding support initiatives have proven effective. Programs that include partners, grandmothers, and other close relatives in breastfeeding education not only improve knowledge but also foster a shared understanding of the mother's goals and needs. Tailoring these interventions to the cultural and relational dynamics of rural Missouri enhances their relevance and impact. Community health workers and peer counselors can be instrumental in facilitating these conversations, addressing misconceptions, and building a supportive family network that reinforces breastfeeding (Blyth et al., 2002; Chapman et al., 2010).

These approaches reflect the Social Ecological Model's emphasis on the interpersonal level, which recognizes that individual behaviors are shaped and sustained by immediate social relationships. By acknowledging the pivotal role of familial influences and equipping families with accurate information and supportive practices, breastfeeding interventions can become more holistic and sustainable. Ultimately, cultivating a family environment that affirms and supports breastfeeding is essential for empowering mothers and improving infant health outcomes across rural communities. Indeed, research by Blyth et al. (2002) indicates that mothers who receive support and encouragement from family members are more likely to initiate and maintain breastfeeding. In rural Missouri, where extended families often live nearby, leveraging familial support may be a powerful strategy for promoting positive breastfeeding practices.

**Community and Organizational Level.**

**Healthcare Access.** Access to baby-friendly hospitals, lactation consultants, and support groups enhances breastfeeding outcomes. Healthcare services is a fundamental determinant of maternal and infant health outcomes, including breastfeeding initiation and duration. Access to healthcare services, including prenatal and postnatal care, is essential for successful breastfeeding. In rural Missouri, limited access to healthcare providers and lactation consultants can hinder breastfeeding initiation and continuation. The CDC (2023) emphasizes the importance of healthcare providers offering consistent and accurate breastfeeding information, addressing concerns, and providing support throughout the breastfeeding journey. Telehealth services have emerged as a potential

solution to bridge the gap in healthcare access. Expanding telehealth services can enhance breastfeeding support and improve outcomes for rural mothers.

In rural Missouri, barriers to healthcare access—such as geographic isolation, provider shortages, and transportation difficulties—significantly hinder mothers' ability to obtain timely prenatal, perinatal, and postnatal care. These limitations often leave rural mothers underserved, increasing the risk of suboptimal breastfeeding outcomes. Timely and consistent healthcare access, particularly during the prenatal and postpartum periods, is essential for establishing and sustaining successful breastfeeding practices. However, rural mothers frequently encounter limited availability of healthcare professionals—especially lactation consultants—who are instrumental in addressing breastfeeding challenges like latch difficulties and milk supply concerns. While evidence-based guidance from healthcare providers is proven to improve breastfeeding outcomes, such support is inconsistently available in many rural areas (Centers for Disease Control and Prevention [CDC], 2023).

To mitigate these disparities, telehealth has emerged as a promising strategy. Virtual consultations with lactation specialists provide real-time, personalized support that eliminates the need for long-distance travel and ensures continuity of care during the critical postpartum period. Studies suggest that telehealth interventions can significantly enhance breastfeeding outcomes and may help narrow the breastfeeding gap between rural and urban populations (Hoddinott et al., 2009).

In addition to formal medical care, informal education and peer support are vital components of breastfeeding promotion, especially in communities with limited access to professional resources. Peer counseling programs, community-based support groups, family networks, and digital platforms offer culturally relevant, accessible support that empowers mothers with practical knowledge and emotional encouragement. Programs like WIC have effectively used peer counselors—often mothers with personal breastfeeding experience—to deliver trusted, culturally competent guidance. These efforts have been particularly impactful among Native American, Latina, and low-income mothers. Similarly, organizations like La Leche League International connect mothers to experienced volunteers who provide evidence-based advice and emotional solidarity. These community-based networks foster maternal confidence and resilience, contributing to longer breastfeeding durations.

The presence of community norms that favor breastfeeding also contributes positively, particularly in rural or culturally cohesive communities (Stough et al., 2019). Yet, rural Missouri continues to face critical shortages of healthcare providers, including obstetricians, midwives, pediatricians, and lactation consultants. This shortage limits opportunities for mothers to receive timely and specialized breastfeeding support (Missouri Perinatal Quality Collaborative, 2024). Lactation consultants, who play a crucial role in resolving early breastfeeding challenges, are predominantly located in urban centers (United States Breastfeeding Committee, 2021). Without local access to these experts, rural mothers are at a higher risk of early breastfeeding cessation.

Transportation is another major barrier to healthcare access in rural areas. Many families lack reliable personal vehicles, and public transportation options are often nonexistent (Syed et al., 2013). For pregnant and postpartum women, transportation difficulties can result in missed prenatal appointments, postnatal checkups, and breastfeeding support visits (Centers for Medicare & Medicaid Services, 2019). These missed interactions reduce the chances for early identification and management of breastfeeding issues, which negatively impacts breastfeeding duration and success. The cumulative impact of healthcare access challenges is evident in breastfeeding outcomes across rural Missouri. Early initiation of breastfeeding—ideally within the first hour after birth—is critical for establishing milk supply and building maternal confidence (World Health Organization, 2023). However, rural hospitals often lack skilled birth attendants and lactation support, limiting mothers' ability to begin breastfeeding promptly (Johnson et al., 2019). Additionally, postpartum visits—which offer essential feeding assessments and support—occur less frequently among rural mothers due to ongoing access barriers (Thayagabalu et al., 2025). Consequently, breastfeeding initiation and duration rates are typically lower in rural areas compared to their urban counterparts (Weston et al., 2025).

Telehealth offers a viable pathway to bridge the healthcare gap in rural Missouri. Telelactation programs enable mothers to receive expert guidance from certified lactation consultants remotely, fostering greater continuity of care (Demirci et al., 2019). Similarly, virtual prenatal visits can reduce travel demands while enhancing provider engagement (American Academy of Pediatrics, 2022).

However, challenges such as limited broadband infrastructure and low digital literacy among rural populations can hinder the effectiveness of telehealth solutions (Maita et al., 2024). Therefore, expanding rural internet access and providing technology training are essential steps in maximizing the reach and success of virtual care.

Missouri's state and local agencies have initiated various efforts to improve healthcare access for rural mothers. The Missouri Department of Health and Senior Services (MDHSS) supports maternal health initiatives that provide transportation assistance, fund home visiting programs, and employ community health workers (MDHSS, 2022). The Missouri Telehealth Network promotes the use of telemedicine to deliver maternal care in underserved areas (Missouri Telehealth Network, 2023). Federally supported programs such as Medicaid and WIC also offer essential maternal and breastfeeding services, though gaps in postpartum coverage and outreach remain (Neuburger et al., 2024).

Despite these ongoing efforts, significant barriers to healthcare access persist in rural Missouri. Geographic isolation, provider shortages, inadequate transportation, and limited breastfeeding support continue to impact mothers' ability to initiate and sustain breastfeeding. While telehealth and policy interventions offer promising solutions, comprehensive strategies that address infrastructure, provider training, and equitable policy implementation are essential. By strengthening these areas, Missouri can better support rural mothers, ultimately improving breastfeeding outcomes and maternal-infant health across its rural communities.

**Work Policies and Work Relationships.** The workplace environment plays a crucial role in shaping breastfeeding practices, particularly in rural regions such as Missouri, where employment structures and support systems often differ significantly from urban areas. A mother's ability to initiate and sustain breastfeeding is influenced by workplace policies, cultural attitudes, and the quality of interpersonal relationships on the job. In rural areas—where employment opportunities may be limited—the availability of supportive policies such as flexible work hours, private lactation spaces, and paid parental leave becomes especially critical for breastfeeding continuation.

In Missouri's rural counties, where agriculture, manufacturing, and service industries dominate, these challenges are especially pronounced. Jobs in these sectors often lack maternity leave and lactation accommodations commonly found in office settings (March of Dimes, 2021). Hourly wage workers or those in physically demanding roles may struggle to take breaks or find private spaces to pump milk, leading to early breastfeeding cessation.

Further complicating matters is Missouri's limited provision for paid maternity leave. Unlike states with more generous policies, Missouri offers minimal state-mandated benefits, frequently forcing mothers to return to work just weeks after giving birth (National Partnership for Women & Families, 2020). This early return can disrupt breastfeeding routines and reduce milk supply due to infrequent milk expression.

In addition to structural policies, the social environment at work profoundly affects breastfeeding success. Supportive supervisors and coworkers

can positively influence a mother's ability to maintain breastfeeding (Lisbona, Bernabé, & Palací, 2020), while unsupportive or indifferent attitudes can increase stress and discourage milk expression (Dizaj et al., 2021). Unfortunately, peer support programs or workplace-based lactation groups are rare in rural settings, further isolating breastfeeding employees (Vilar-Compte et al., 2021).

The combination of inadequate structural supports and unsupportive social environments contributes to lower breastfeeding duration among employed mothers in rural Missouri. Research shows that mothers who return to work early or face workplace barriers are significantly more likely to stop breastfeeding before the recommended six-month mark (Mirkovic et al., 2014), which is concerning given the well-documented benefits of exclusive breastfeeding for infant and maternal health (World Health Organization, 2021).

Improving breastfeeding support in rural Missouri workplaces requires both structural and cultural changes. Strategies might include stronger enforcement of existing lactation laws, expanded paid family leave, and the development of workplace programs tailored to rural industries. Employer education initiatives that emphasize the business case for breastfeeding support—such as reduced absenteeism and improved employee satisfaction—may also help foster more accommodating environments (Johnston & Esposito, 2007).

The Missouri Breastfeeding Coalition (2023) emphasizes the importance of workplace policies that support breastfeeding, particularly in rural communities where systemic barriers can undermine maternal and infant health. Such policies

not only benefit working mothers but also contribute to better health outcomes for their children.

**Community Resources**. Community resources serve as vital lifelines for breastfeeding mothers, particularly in rural areas where healthcare infrastructure is limited and access to formal lactation services is scarce. In rural Missouri, these resources—ranging from peer support groups and home visiting programs to faith-based initiatives and nonprofit partnerships—play a critical role in shaping breastfeeding behaviors, enhancing maternal confidence, and supporting mental health. The combination of geographic isolation, provider shortages, and limited access to specialized lactation consultants creates unique challenges that community-based efforts are often best positioned to address.

Peer support is one of the most effective strategies for improving breastfeeding outcomes in underserved communities. Support groups hosted by local health departments, churches, or community centers offer mothers the opportunity to share experiences, receive encouragement, and access culturally relevant advice from others who have navigated similar journeys (Barnas, 2021). This kind of interpersonal connection is especially important in rural settings, where mothers may experience social isolation or lack close family networks. Research shows that peer support improves breastfeeding initiation and duration by increasing maternal self-efficacy and providing timely, real-world solutions to common challenges (Dennis, 2003; McFadden et al., 2017). Trained peer counselors, particularly those affiliated with the Women, Infants, and Children (WIC) program, serve as accessible and trusted sources of information, offering

culturally sensitive guidance that bridges the gap between clinical care and everyday lived experience (Demirci et al., 2019; Wagner et al., 2024).

In addition to group-based models, personalized in-home support is a key resource in rural Missouri. Programs such as Parents as Teachers and the Missouri Home Visiting Program deploy community health workers (CHWs) to provide one-on-one education, early screenings, and referrals. These services are critical where transportation, childcare, or scheduling barriers prevent access to clinic-based care (Love et al., 1997; MDHSS, 2022). Home visits allow professionals to observe breastfeeding practices, tailor their guidance, and create safe spaces for mothers to express concerns—particularly around mental health. Studies indicate that home-based interventions not only improve breastfeeding duration and exclusivity but also enhance maternal psychosocial functioning when trust and continuity are established (McFarlane et al., 2017).

Faith-based organizations and cultural institutions further enrich the breastfeeding support landscape. Churches often function as community hubs, offering health education, social support, and moral encouragement. They may host workshops, support groups, or family programs that integrate breastfeeding promotion within spiritually meaningful contexts (Wells et al., 2022). For mothers whose decisions are influenced by faith or cultural values, such environments help reduce stigma and build confidence. Similarly, organizations serving Missouri's Hispanic, African American, and Indigenous populations provide linguistically appropriate, culturally tailored education that addresses systemic disparities and fosters empowerment (Pérez-Escamilla et al., 2016).

Local health departments and nonprofit agencies offer a more formal structure for support. Many distribute breast pumps, offer lactation counseling, and run maternal and child health programs that include breastfeeding education (MDHSS, 2022). National organizations like La Leche League and March of Dimes contribute helplines, advocacy, and peer education adapted for rural needs (March of Dimes, 2021). While staffing shortages, funding limitations, and logistical barriers often constrain these programs, cross-sector collaborations have improved their sustainability and effectiveness (Suarez-Balcazar et al., 2020).

These community efforts also intersect significantly with maternal mental health. Breastfeeding is linked to psychological well-being through hormonal pathways—such as oxytocin release—which can enhance mood and reduce stress (Modak et al., 2023). Achieving breastfeeding goals reinforces a mother's sense of agency and accomplishment. Conversely, early weaning or persistent breastfeeding difficulties can contribute to guilt, grief, and self-doubt (Dennis & McQueen, 2009). These emotional responses are especially poignant in rural areas, where formal mental health services may be inaccessible.

The relationship between breastfeeding and maternal mental health is bidirectional. Postpartum depression can undermine breastfeeding motivation, suppress milk production through hormonal dysregulation, and exacerbate the physical and emotional demands of nursing (Dias & Figueiredo, 2015). In rural Missouri, where counseling services may be geographically or financially out of reach, community-based programs often serve as the primary touchpoints for postpartum care. Peer counselors, home visitors, and church leaders are frequently

among the few individuals regularly engaging with new mothers, uniquely positioned to recognize warning signs and connect families to services.

A trauma-informed, integrated approach is therefore essential. As Kendall-Tackett (2007) notes, those providing breastfeeding support must also be equipped to understand and address the emotional complexities of the postpartum experience. Compassion, cultural relevance, and sustained relationships are key to promoting both breastfeeding success and maternal well-being.

The Missouri Department of Health and Senior Services (MDHSS) administers a variety of maternal and child health initiatives focused on prenatal care, breastfeeding education, and postpartum support (MDHSS, 2022). The Missouri Breastfeeding Coalition works across health systems, community organizations, and policymakers to improve breastfeeding outcomes and promote equity. However, persistent workforce shortages and funding constraints limit the scope and reach of these programs—particularly in rural regions where access to lactation consultants and breastfeeding support groups remains inconsistent (Missouri Breastfeeding Coalition, 2023).

## Public Policy

At the policy level, legislation supporting paid maternity leave, workplace lactation accommodations, and public breastfeeding rights directly impacts a mother's ability to breastfeed, especially in economically disadvantaged areas (Missouri Breastfeeding Coalition, 2023).

**State Policies.** State-level policies in Missouri provide a legal and structural framework intended to support maternal health and breastfeeding;

however, disparities persist, particularly in rural regions. These disparities are influenced by limitations in healthcare access, inconsistent workplace accommodations, and a lack of culturally responsive education. Addressing these gaps through expanded telehealth access, enhanced funding, and community-informed outreach is essential to ensure that state policy translates into equitable outcomes across the maternal health continuum. To do so effectively, continued evaluation of these policies, with direct input from rural mothers and healthcare providers, remains critical.

Missouri's maternal health system faces considerable challenges, with the state consistently ranked among the lowest nationally for women's health indicators. In 2018, Missouri was ranked 50th in women's health outcomes and slightly improved to 45th by 2020, highlighting ongoing systemic issues in access to quality care (Barnas, 2021). Approximately half of Missouri's counties are designated as maternity care deserts, meaning they lack obstetric hospitals or providers (March of Dimes, 2021). These shortages make policies related to community health workers, transportation infrastructure, and telehealth services particularly vital for improving maternal health and breastfeeding support in rural areas (Missouri Department of Health and Senior Services [MDHSS], 2022).

Missouri has enacted a number of laws aimed at promoting maternal and infant health, including breastfeeding rights and workplace accommodations. Missouri Revised Statutes § 191.918 affirms a mother's right to breastfeed in any public or private location where she is authorized to be, and specifies that breastfeeding does not constitute indecent exposure. The law also provides jury

duty exemption for nursing mothers who submit a physician's statement (Mo. Rev. Stat. § 494.430).

In 2021, the Missouri legislature passed HB 432, mandating that public schools offer lactation accommodations for both staff and students. This includes break time and a private, non-bathroom space for expressing milk. The Missouri Department of Elementary and Secondary Education was tasked with developing a model policy to guide public school districts in this effort. Additionally, state-recognized programs such as the Breastfeeding Friendly Worksite and Child Care initiatives encourage employers and childcare providers to support breastfeeding by offering appropriate accommodations (MDHSS, 2022).

Healthcare providers also bear responsibility under state law to support breastfeeding education. Missouri Revised Statutes § 191.915 requires that hospitals and ambulatory surgical centers provide breastfeeding education to new mothers. Physicians offering obstetrical or gynecological care are required to inform patients about the postnatal benefits of breastfeeding and available local support groups.

A notable recent policy shift came in response to the state's high maternal mortality rates. As of October 2, 2024, Missouri's Medicaid program, MO HealthNet, began reimbursing for doula services. This expansion was spearheaded by the Center for Advancing Health Services, Policy & Economics Research (CAHSPER) at Washington University, in collaboration with community health leaders. The emergency rule—effective through March 28,

2025—recognizes the role doulas play in improving birth outcomes, emotional support, and breastfeeding success, particularly for underserved populations.

Missouri's state policies specifically addressing breastfeeding include workplace protections, hospital initiatives, and support through public health programs. Missouri Revised Statutes § 191.529 (2010) requires that employers provide reasonable break time and a private space (not a bathroom) for employees to express breast milk. These protections align with the federal Affordable Care Act; however, enforcement in smaller or rural workplaces may be inconsistent (Centers for Disease Control and Prevention [CDC], 2020).

In the clinical setting, Missouri encourages hospitals to seek Baby-Friendly Hospital designation—a certification based on ten evidence-based steps to support breastfeeding initiation and continuation. Despite these efforts, the number of designated facilities remains limited across the state, with rural areas particularly underrepresented, contributing to lower breastfeeding initiation rates among rural mothers (Baby-Friendly USA, 2023; MDHSS, 2022).

Support through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is another critical policy mechanism. The Missouri WIC program provides nutrition education, breastfeeding counseling, and access to lactation support, including peer counselors and consultants (Missouri WIC Program, 2023). WIC's role is especially vital for low-income mothers, who may experience additional social and logistical barriers. However, access to WIC services in rural counties can be hindered by transportation issues, limited staff

capacity, and scheduling constraints (U.S. Department of Agriculture [USDA], 2021).

Missouri's policy landscape demonstrates a growing recognition of the importance of maternal and infant health, yet disparities in rural access and implementation persist. A more equitable system will require intentional expansion of resources, increased rural representation in policy development, and integrated evaluation mechanisms that prioritize community voice and lived experience.

**Federal Policy.** Federal legislation, such as the *Break Time for Nursing Mothers* provision under the Affordable Care Act (ACA), requires employers to provide reasonable break time and a private, non-bathroom space for breastfeeding employees to express milk during the workday (U.S. Department of Labor, 2019). However, the implementation of these policies varies, and many rural workplaces lack the facilities or flexibility necessary to support lactating employees effectively (Snyder et al., 2019).

## Building Maternal Breastfeeding Self-Efficacy through the SEM Model

Dewey's Experiential Learning Theory emphasizes the transformative potential of learning through active engagement and reflection (Dewey, 1938). This type of learning offers a powerful, integrated approach for designing and evaluating breastfeeding support interventions that are both contextually grounded and experientially meaningful.

## Embodied Learning in the Breastfeeding Journey

Dewey (1938) proposed that education is most effective when rooted in real-life experience, processed through cycles of action, reflection, and adaptation. In breastfeeding contexts, this theory underscores the importance of hands-on learning, reflective problem-solving, and real-time feedback—all of which promote not only technical competence but also maternal confidence and emotional readiness. Dewey also noted that not all experiences are inherently educational; their value depends on how they are interpreted and integrated into future behavior. This insight is especially relevant for new mothers navigating breastfeeding in real time, often under pressure and in unfamiliar territory.

Programs grounded in experiential learning intentionally create self-efficacy through embodied interaction: practicing latch techniques, observing peer models, and experimenting with new positions or routines in supportive environments. They have direct links to build self-efficacy through mastery experiences, vicarious learning, and social persuasion. These hands-on, relational experiences not only build skills, but also foster confidence and resilience, allowing mothers to internalize success and feel supported through shared learning. Tools like simulation dolls, role-play scenarios, and guided nursing sessions have been shown to increase breastfeeding self-efficacy and duration (Grassley & Eschiti, 2008), aligning with adult learning needs and Dewey's model of active, personalized learning.

Kolb's (1984) formalization of Dewey's work into a four-stage learning cycle—concrete experience, reflective observation, abstract conceptualization, and active experimentation—further elucidates how breastfeeding skills are

developed over time. A mother may encounter discomfort during a feeding (concrete experience), reflect on the cause (reflective observation), identify a potential adjustment (abstract conceptualization), and try a new approach in the next session (active experimentation). This iterative process not only aligns with Kolb's experiential learning cycle but also reinforces breastfeeding self-efficacy through responsive parenting and adaptive skill-building (Kolb, 1984; Dennis, 1999).

These principles also extend to training healthcare professionals and lactation educators. Simulations, case discussions, and reflective exercises not only build clinical expertise but foster empathetic, culturally responsive care—critical in supporting breastfeeding mothers across diverse settings. Michelson (2015) expands experiential learning theory by critiquing dominant educational paradigms that devalue embodied, emotional, and situational knowledge—forms of understanding often central to women's lived experiences. In the context of breastfeeding, this critique calls attention to the marginalization of maternal knowledge gained through caregiving, community, and personal intuition. Michelson challenges systems that only validate experiential learning when it can be codified or institutionally recognized.

Breastfeeding, as a deeply personal and embodied experience, cannot be fully understood through disembodied instruction alone. Education that fails to engage with the physical and emotional realities of breastfeeding risks alienating mothers and undermining their self-efficacy.

Drawing from Dewey, Lindeman (1926) emphasized that adult education should begin with learners' life experiences and immediate needs. He argued that adults learn best when they are active participants in defining their goals and can directly apply new knowledge. In the context of breastfeeding, this principle reinforces the importance of maternal agency and contextual relevance. When mothers are given space to articulate their goals, experiment with techniques, and reflect on their experiences, learning becomes more durable and meaningful.

**Integrating Social Ecological Model (SEM) and Experiential Learning.** When combined, SEM and experiential learning offer a complementary framework for breastfeeding self-efficacy. SEM identifies the structural and social layers that shape behavior, while experiential learning provides the mechanism of change—the how of skill development, confidence-building, and adaptation.

For example, a hospital may adopt baby-friendly policies (organizational level), but unless mothers receive hands-on postpartum support, real-time guidance, and space to reflect on feeding experiences, those policies may have limited impact. Similarly, peer mentor programs, breastfeeding circles, or home visiting initiatives can function at the community level while providing immersive, learner-centered engagement—fostering both knowledge and belonging.

In rural areas, these approaches are particularly vital. Geographic isolation, provider shortages, and limited breastfeeding infrastructure demand creative, experience-rich interventions such as mobile lactation clinics, telehealth

consultations with interactive components, and home-based peer support. These strategies not only address access barriers but embody the principles of experiential learning—meeting mothers where they are, both physically and emotionally (Hoddinott et al., 2009).

Breastfeeding is a multidimensional behavior situated at the intersection of individual experience and systemic influence. The integration of Dewey's experiential learning theory with the Social Ecological Model creates a holistic blueprint for designing breastfeeding education that is inclusive, effective, and responsive to context. The role of embodied knowledge, learner autonomy, and cultural sensitivity is critical to how mothers build self-efficacy to initiate and sustain breastfeeding (Kolb, 1984; Michelson, 2015; Lindeman, 1926).

By centering mothers' lived experiences and facilitating opportunities for reflection, experimentation, and mutual learning, breastfeeding support programs can foster not only skill acquisition but also maternal empowerment, identity affirmation, and community resilience—especially in rural settings where such outcomes are both most needed and most transformative.

**Summary**

Breastfeeding self-efficacy behaviors and outcomes are influenced by all layers of the SEM. In rural Missouri, these factors intersect to create unique challenges and opportunities for breastfeeding initiation and continuation. Addressing these issues requires a comprehensive approach that involves multiple layers of familial and community support and care so that new mothers can have experiences that build self-efficacy. By enhancing breastfeeding support systems and addressing barriers, it is

possible to improve breastfeeding initiation and duration rates, leading to healthier mothers and infants.

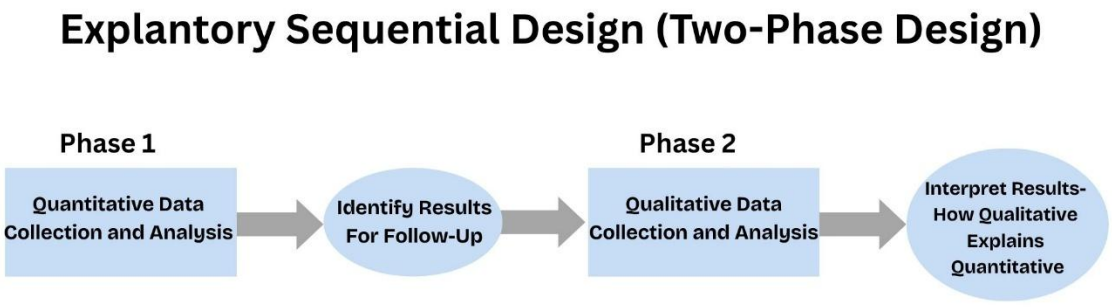
# Chapter 3: Methods

This sequential explanatory mixed methods study, represented in Figure 3, (Allele & Malau-Aduli, 2023; Creswell & Creswell, 2018.) is designed to explore the factors that influence whether rural Missouri mothers continue or cease breastfeeding. By combining a survey data set with the qualitative interviews, the study aimed to identify both the barriers and supports affecting breastfeeding mothers within rural settings.

**Figure 3**

***Explanatory Sequential Design***

*Adopted from Creswell and Creswell, 2018*




This study was approved by the University of Missouri Institutional Review Board (IRB # 2097711) to gather insights into the experiences of breastfeeding mothers in rural Missouri. While the data collection occurred statewide, for this study, data analysis highlights two rural Missouri counties: Bates and Vernon. The Social Ecological Model (Bronfenbrenner, 1979) served as the analytical lens to elucidate how multiple layers of influence, from individual to community and institutional levels, shaped breastfeeding behaviors and outcomes within these two counties. This research study sought to explore how mothers seek and receive information about breastfeeding,

drawing on a quantitative surveys and qualitative interviews as data sources. Through this approach, I aim to uncover key insights into their individual experiences that supported, or constrained, their self-efficacy, while also considering the broader social and ecological factors that influence these experiences, such as community, cultural norms, and relationships.

To guide this investigation, the study will address the following specific research questions:

1. What Social Ecological Model (SEM) layers do rural Missouri women identify as impacting their breastfeeding behaviors and outcomes? Are the SEM layers within the state the same as within two rural focal counties (Bates and Vernon)?
2. How do the SEM layers individually and/or collectively impact breastfeeding behaviors and duration?

**Study Context: Rural Missouri Maternal Health Care**

This study is situated in the U.S. state of Missouri, located in the south Midwest. Missouri has a population of approximately 6.2 million people as of 2023 (United States Census Bureau, 2023). Missouri's population is predominantly White, making up about 80% of the total, while Black or African American individuals comprise roughly 12-13% of the population (United States Census Bureau, 2020). The state also has a growing Latino population, which constitutes 4-5% of residents, most of whom reside in urban areas (United States Census Bureau, 2020). Asian Americans represent about 2-3% of the total state population (United States Census Bureau, 2020). Thirty seven percent of Missourians live in urban and suburban areas, including the major metropolitan regions

of St. Louis, Kansas City, Springfield, and Columbia. These cities act as economic and cultural hubs for the state, with a diverse population and industries such as manufacturing, healthcare, and technology (Missouri Economic Research and Information Center, 2022). The remaining 63% of residents living in areas identified by the state as rural (Missouri Economic Research and Information Center, 2022).

I define rural using the Health in Rural Missouri Biennial Report, 2022-2023 which defines rural counties by whether they meet two key criteria. First, the county must have a population density of less than 150 people per square mile. Second, the county should not contain any part of a central city within a Metropolitan Statistical Area (MSA). This definition aligns with the U.S. Census Bureau and other federal agencies, which typically consider factors such as population size, density, and commuting patterns when determining whether an area should be classified as rural.

For this study, I highlight analysis within two rural Missouri Counties: Vernon and Bates in which each county meets the rural definition and are identified by the state of Missouri as rural counties (Missouri Department of Health and Senior Services, Office of Primary Care and Rural Health, 2023). Across both counties, doctors specializing in obstetrics-gynecological (OB-GYN) is limited, often requiring women to rely on general practitioners or travel to an urban area for specialized services (Missouri Department of Health and Senior Services, 2022). Furthermore, there is a shortage of healthcare providers in rural areas, resulting in longer wait times for appointments and limited access to specialized care (Missouri Department of Health and Senior Services, 2022). In addition, the Missouri Health Care Availability and Outcomes report highlights that both Bates and Vernon counties are categorized with the lowest physician-to-population ratios

in the state, with only 0-41 physicians per 100,000 people (Kuhns, & Low, 2021). While there are initiatives within the state to offer transportation, mobile health units, telemedicine, and community health programs for rural Missouri health care deserts, the two focus counties, Bates and Vernon, do not have these options available.

### *Vernon County*

Vernon County, located in southwest Missouri, has a population of approximately 19,651 residents (Data USA, 2024). The average annual income for the county is $44, 386 (County Average Wages, 2023), which is less than the average annual income across the state of Missouri ($68,920). The poverty rate in Vernon County is 19% (Data USA, 2023). The county's ethnic composition is predominantly non-Hispanic White (92.9%), with small percentages of non-Hispanic Black (0.9%), American Indian or Alaska Native (0.8%), and Hispanic (2.9%) residents (County Health Rankings & Roadmaps, 2024). Vernon County also faces an 18.1% poverty rate, which can affect access to healthcare and maternal services for new mothers (Data USA, 2024). In 2023, the county recorded 1,096 births, with 19% of mothers delivering outside the county, indicating limited local access to certain healthcare services (Vernon County Health Department, 2023). Although Vernon County has three rural health clinics and a hospital that provides labor and delivery services, it does not have a neonatal intensive care unit (NICU), which can be a significant concern for high-risk pregnancies and newborn care (Rural Health Information Hub, 2025).

### *Bates County*

Bates County, with a population of 16,177, with an average annual income of $41,029, which is also less than the state overall average of $68,920). The ethnic composition in Bates County is like Vernon County, with 92.5% non-Hispanic White, 1.5% non-Hispanic Black, 1.0% American Indian or Alaska Native, and 3.0% Hispanic (County Health Rankings & Roadmaps, 2024). This county also experiences a slightly higher poverty rate at 19.1% (Data USA, 2024), than the state overall (12%) (Tierney, 2024). Bates County has one hospital, with six clinics, but provides no labor and delivery (County Health Rankings & Roadmaps, 2024). In 2023, Bates County recorded 178 births (Bates County Health Department, 2023). Since there are no local facilities for labor and delivery, women most likely traveled to neighboring counties for maternal health care, labor, and delivery.

## Data Collection

A timeline of data collection is provided in Figure 6.

### *Survey*

A statewide survey was placed in Qualtrics, provided in Appendix B. Careful consideration was given to designing the survey in a way that would allow for more detailed responses, particularly focused on understanding the unique experiences of mothers. The survey was designed drawing on surveys present within the literature that focus on breastfeeding experiences, barriers, and support systems, ensuring that the questions were relevant and aligned with established research on maternal health and breastfeeding practices. The questions were informed by a review of literature on breastfeeding in rural Missouri (Goodman et al., 2016); Missouri Department of Health and Senior Services. (n.d.); Odom et al., 2014), and the Pregnancy Risk Assessment

Monitoring System (PRAMS; Centers for Disease Control and Prevention, 2022) was used as a framework to guide question development. The survey was reviewed by Sarah Davis, a Maternal Health Specialist at the University of Missouri Extension and former midwife, who provided valuable insights during the development process.

The survey included a total of 91 questions with all questions specific to the breastfeeding experiences of mothers residing in rural Missouri with at least one child under 24 months old. This age range was chosen because the World Health Organization recommends that mothers should breastfeed for up to two years of age and beyond (World Health Organization, 2025). The number of questions a participant was prompted to answer during the survey depended on their previous responses. For example, a mother with one child was asked questions about breastfeeding experiences for that one child as opposed to a mother of three children that was asked about breastfeeding experiences for each of her three children. Similarly, mothers who breastfed one or more children responded to different questions than those who did not.

The survey was structured with a series of well-defined questions aimed at gathering both demographic data and specific insights into mothers' breastfeeding experiences. Participants were encouraged to provide honest and comprehensive responses, which were then analyzed quantitatively to identify trends, patterns, and correlations in the data. By using Qualtrics, the survey ensured an IRB approved streamlined and efficient data collection process, providing results for further analysis.

***Survey Distribution***

The survey was distributed via social media platforms (e.g., Facebook) to reach a broad and diverse sample of rural women across Missouri. The survey was promoted

through a link and flyers that have a QR code so that women could complete the survey at their own convenience, whether from a mobile device, tablet, or computer. This method of data collection allowed for a large and diverse group of participants, giving the study a broader perspective on breastfeeding practices and challenges faced by mothers from various backgrounds. To ensure a representative sample, potential participants were prescreened through the survey. The flexibility of completing the survey through a digital platform made it accessible to a wide audience, increasing the overall response rate and enhancing the generalizability of the findings.

To encourage survey participation, several strategies were employed. The survey was shared on local Facebook groups focused on parenting, reaching a relevant audience of mothers across Missouri. To further incentivize participation, a gift card drawing was offered to those who completed the survey. Clear communication was key, emphasizing the survey's purpose to capture mother's experience, especially in rural areas. The survey was designed to be mobile-friendly and quick to complete, making it accessible for busy mothers. These efforts helped ensure participation and valuable insights. Launching the survey on Facebook led to partnerships with various stakeholders across the state of Missouri which included the health departments, childcare centers, local schools, hospitals, and federal agencies.

Of note is the single facility hospital with delivery services located in Vernon County, which advertised the survey. This hospital is the only facility in the area providing delivery services, which was particularly notable because it serves as the primary healthcare provider for expectant mothers in a rural region with limited access to other medical facilities offering similar services. This hospital is especially crucial for the

rural county community, as it provided essential care to a population that would otherwise have to travel significant distances to access other healthcare options. Its role in the county's healthcare infrastructure made it a critical partner in reaching a significant portion of the population, particularly those who might face barriers in accessing healthcare or specialized services due to the area's rural nature.

**Women Infants, and Children (WIC) Program**

Also, of note, the survey was advertised by the Women, Infants, and Children (WIC) program offices. The WIC program is a federally funded initiative by the United States Department of Agriculture that provides additional nutritional support to expectant and new mothers, as well as young children. In Missouri, there are 115 agencies that administer this program. Eligibility for assistance from the WIC Program is based on an income level of 185% of the federal poverty line (Missouri WIC Income Guidelines, 2024). Below in Figure 6, show income levels at different poverty levels. For example, a family of 4 at the 185% poverty level would have an annual income of $57,720 or less.

The WIC program provides supplemental food packages tailored to the specific needs of women, infants, and children. Nutritionists work with participants to individualize these packages based on their health and nutritional requirements. WIC strongly encourages and supports breastfeeding, offering additional food options to women who fully breastfeed. For infants who are not fully breastfed, WIC provides iron-fortified infant formula. Starting at six months of age, all infants may receive infant cereal, fruits, and vegetables, while fully breastfed infants are also eligible for infant meats.

Women and children participating in WIC can receive a variety of nutritious foods, including milk, soy milk, eggs, cheese, yogurt, cold and hot cereals, 100% juice, peanut butter, dried or canned beans, whole grain breads, brown rice, tortillas, whole wheat pasta, and fresh or frozen fruits and vegetables. Women who exclusively breastfeed may receive additional items such as canned tuna, salmon, or sardines. In cases of certain medical conditions, WIC may also provide exempt infant formulas and specially approved nutrition. WIC is designed to supplement a family's diet, not to provide all food a mother or child needs each month. The program's food packages aim to support the developmental needs of infants, align with pediatric feeding recommendations, and address the specific nutritional demands of pregnant and breastfeeding women, helping replenish nutrients used during pregnancy and lactation. Household size plays a crucial role in determining the income level that qualifies a family for assistance.

The process of connecting with these stakeholders was not solely through formal partnerships but also happened indirectly. By sharing the survey on social media, individuals with connections to these organizations—such as employees, community leaders, or even participants who had previously interacted with healthcare services—often helped spread the word further. These individuals, having firsthand knowledge or experience with the hospitals, health departments, and schools, helped bridge the gap between my initial outreach and the survey's distribution. In some cases, these connections led to introductions or further collaborations with key stakeholders who were initially unaware of the survey. Through this organic process, the survey was able to reach a wider audience, ensuring that underrepresented groups, particularly those in rural

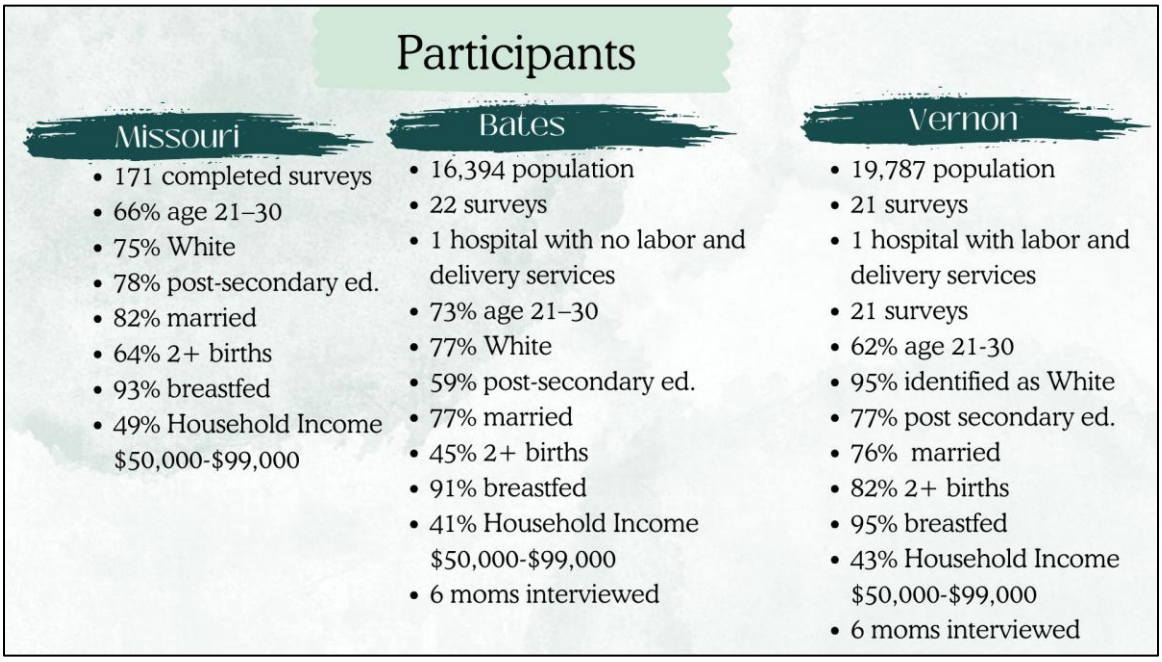
or hard-to-reach areas, were included in the data collection, thus offering a more holistic view of the health trends and needs of the region.

**Participants**

This survey gathered demographic information and assessed eligibility criteria, such as experience with breastfeeding, living in a Missouri rural county, the age of their youngest child, and if they are currently or did breastfeed. The survey was utilized both for quantitative analysis and to recruit mothers for an interview. This approach not only helped ensure a diverse and relevant sample but also respects participants' preferences and boundaries regarding participation in the study.

**Figure 4**

***Overview of Participant Demographics***




Participants that partially answered the survey was n = 651. The number of participants that completed all survey questions was n = 171. After consulting with a statistician at the Center for Applied Statistics and Data Analysis at the University of

Missouri, I chose to only analyze those mothers that completed the entire survey. All demographic information, including age, ethnicity, number of children, and WIC access is included in the findings. The participants zip code was used as a demographic marker to exclude women outside of Missouri. If the recorded zip code was not within the state of Missouri, then the participants responses were not included in the study results. Descriptive statistics were used to provide an overview of breastfeeding experiences and demographic patterns across the state and within the two focus counties, Bates and Vernon. While inferential tests such as *t*-tests could be used to compare counties, the intent of this analysis was not to compare but to describe and contextualize conditions within each county.

**Participant Demographic Information**

**Participant Age.** Table 1 provides ages of the participants, while Table 2 shows the participant race. Sixty-six percent of participants across the state of Missouri were mothers between the ages of 21 and 30 years old.

**Table 1. Participant Age at Time of Survey**

| Age | 18 to 20 years old | 21 to 25 years old | 26 to 30 years old | 31 to 35 years old | 36 to 40 years old | 41 to 45 years old |
|---|---|---|---|---|---|---|
| Missouri | 1% | 21% | 45% | 23% | 5% | 5% |
| Bates | 0% | 41% | 32% | 9% | 14% | 5% |
| Vernon | 0% | 24% | 38% | 33% | 5% | 0% |

**Participant Ethnicity.** At the state level, 75% of participants identified as White/Caucasian, with slightly higher percentages for the two focus counties: 77% in Bates County and 95% in Vernon County (with the remaining 5% being Hispanic or

Latino). The remaining participants in Missouri identified as African American individuals made up the largest minority group, representing 20% of the participants. Hispanic or Latino individuals accounted for 2%, while those identifying as Asian or Pacific Islander comprised 1% of the total. Similarly, Native American or Alaska Native participants also made up 1% of the group. Additionally, individuals who identified as Multiracial or Biracial represented 2% of the participants.

This demographic distribution emphasized the importance of inclusive engagement efforts to ensure that programs and services are responsive to the diverse communities across Missouri. In Bates County, participant demographics revealed racial and ethnic diversity within the community. Asian or Pacific Islander individuals comprised 5% of participants, and Hispanic or Latino individuals also accounted for 5%. In addition, 14% of participants identified as Multiracial or Biracial, representing a significant portion of the population.

**Table 2. Racial Demographics of Study Participants**

| Race | Asian or Pacific Islander | Black or African American | Hispanic or Latino | Native American or Alaska Native | White or Caucasian | Multiracial or Biracial |
|---|---|---|---|---|---|---|
| Missouri | 1% | 20% | 2% | 1% | 75% | 2% |
| Bates | 5% | 0% | 5% | 0% | 77% | 14% |
| Vernon | 0% | 0% | 5% | 0% | 95% | 0% |

**Education.** As shown in Table 3, 78% of respondents reported some form of post-secondary education beyond high school.

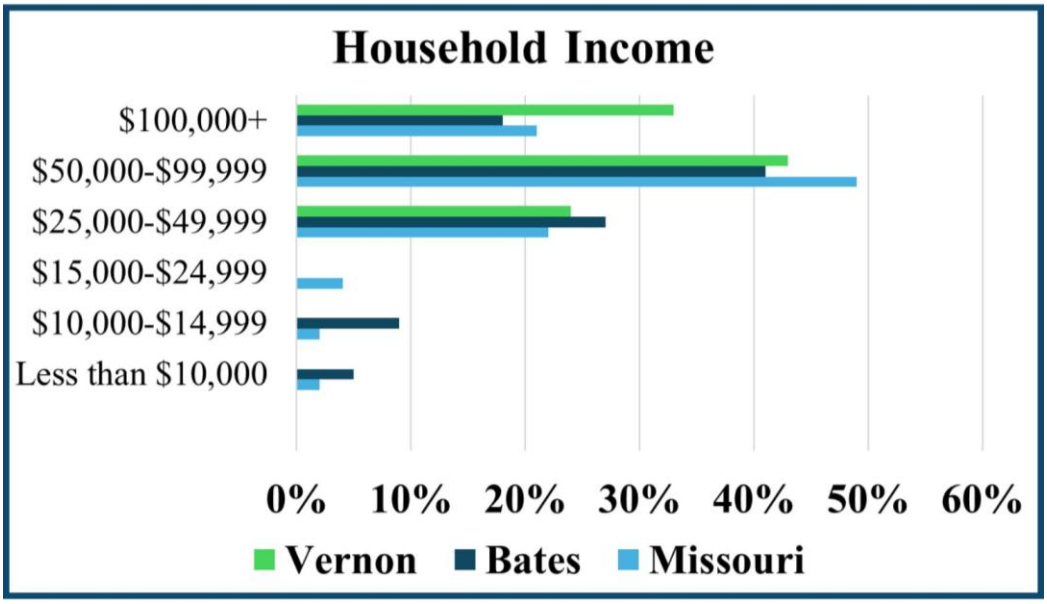
**Table 3. Educational Attainment**

| | GED | High School Diploma | Associate's | Bachelor's | Master's or Higher Education |
|---|---|---|---|---|---|
| Missouri | 1% | 21% | 15% | 43% | 20% |
| Bates | 0% | 41% | 9% | 32% | 18% |
| Vernon | 0% | 24% | 24% | 43% | 10% |

**Household Income.** Furthermore, 49% of respondents statewide, along with 41% from Bates County and 43% from Vernon County, reported an annual household income between $50,000 and $99,999, as shown in Figure 5.

**Figure 5**

Household Income




**Single or Married Status.** Finally, as shown in Table 4, 82% of participants statewide were married, while these numbers were slightly lower for the counties of

interesting in which 77% of participants were married in Bates County and 76% in Vernon County.

**Table 4. Marital Status**

| | Single | Married | Single with a Partner |
|---|---|---|---|
| Missouri | 6% | 82% | 11% |
| Bates | 9% | 77% | 14% |
| Vernon | 10% | 76% | 14% |

***Interview***

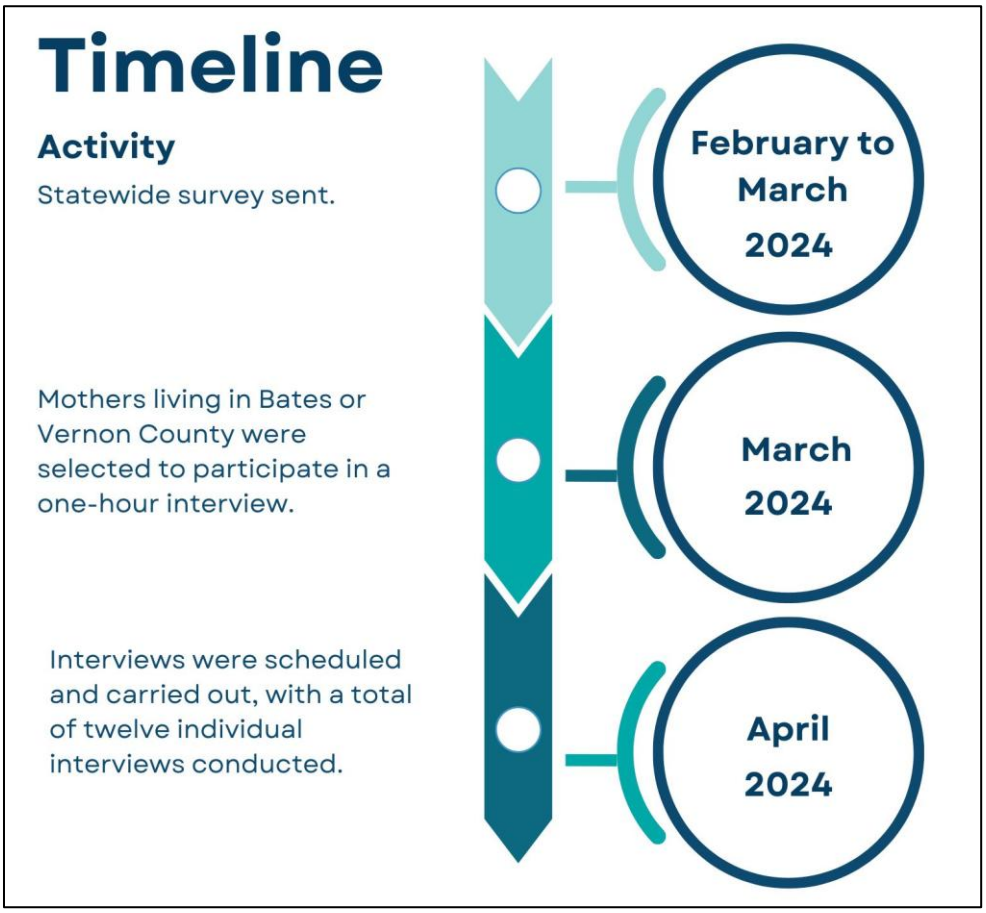
Participants that completed the survey, had a zip code within Bates and Vernon Counties, and responded that they were willing to be interviewed were contacted and interviewed between March 2024 – April 2024. Interviews were conducted using a semi-structured interview (Creswell, 2014) protocol that sought to elucidate experiences, challenges, and perceptions related to breastfeeding. The interview protocol is included in Appendix A. The interview was used to elucidate information that women stated in the survey. The goal was to explore more deeply if and how women were able to access breastfeeding resources, specifically examining the impact of social support, community resources, and workplace policies on their self-efficacy. This phase provided valuable qualitative insights, allowing me to delve into the personal and contextual factors influencing breastfeeding decisions for women from these two counties.

Of those mothers that completed the survey in its entirety, 121 submitted their information for a semi-structured interview, which was the second phase of the study (qualitative). Of the 121 that were willing to be interviewed, twelve from the two

highlighted counties were willing to participate in interviews (n = 6 from Bates and n = 6 from Vernon). Interviews were audio-recorded with participants' consent to ensure accurate capture of their narratives. Interview length ranged from 37-72 minutes with the average interview length of 47 minutes. The interview protocol is included in Appendix A.

**Figure 6**

***Timeline of Data Collection Activities***




**Data Analysis**

Analysis of those survey questions that were not open ended, occurred in consultation with a statistician from the University of Missouri Center for Applied

Statistics and Data Analysis. The statistical analysis involved extracting data through Qualtrics. Data cleaning was conducted to ensure accuracy and integrity of the survey dataset (Rahm & Do, 2000). Incomplete or partially completed surveys were excluded from analysis. The dataset was broken down into specific levels for more granular analysis through frequency distributions and calculating percentages to understand trends and patterns in responses.

The data was first examined on a state level, providing a broad overview of responses. Next, a focused analysis was conducted on Bates and Vernon counties. This allowed for a deeper, more localized examination of the data, helping to identify any regional differences or specific trends within these counties compared to the broader state context. By examining both state and county-level data, the analysis provided a comprehensive view of the findings, highlighting both overall state trends and more specific regional insights.

**Qualitative Analysis**

Thematic analysis (Braun and Clarke, 2022) was used to examine and interpret the qualitative data. This approach allows for a structured, systematic identification of patterns and themes within the data, providing a nuanced understanding of the interconnected factors — ranging from individual to societal — that shape maternal health outcomes. Thematic analysis is widely recognized as a robust qualitative methodology that enables researchers to uncover themes that reflect participants lived experiences. As outlined by Braun and Clarke (2006), this method involves an iterative, multi-phase process that results in a comprehensive and meaningful analysis of qualitative data.

### *Qualitative Analysis of Open-Ended Question on Survey*

One survey question, question 69, was also included in qualitative analysis. It was an open-ended question: "Why did you choose to breastfeed?" Of the 171 participants, 159 reported having experience with breastfeeding and provided responses to this item. All responses were compiled into an Excel spreadsheet for analysis. I used pattern matching to code answers for this question (Sinkovics, 2018).  was then conducted to identify key themes. Seven primary themes emerged, with specific words and phrases used by participants falling under each category:

| Category | Example Responses |
|---|---|
| Health Benefits for Baby | Healthier, best nutrition, protect against disease, immunity, antibodies |
| Bonding and Emotional Connection | Mother/baby bond, connection, emotional attachment |
| Cost Savings | Cheaper, formula is expensive, cost-effective |
| Natural/Instinctual Choice | Natural, God designed, what I was supposed to do |
| Convenience | Always available, easier, on-the-go |
| Influence/Support | Doctor said, mother advised, peer pressure |
| Knowledge and Belief in Benefits | Knew it was best, learned from parents, as a nurse |

### *Qualitative Analysis of the Interview*

The interviews were qualitatively coded in multiple phases. Phase 1 involved familiarizing myself with the qualitative dataset, this involved immersing myself in audio recordings of interviews with rural mothers, transcribing the interviews, and closely reviewing the transcriptions. This phase

was vital for gaining a deep, intuitive sense of the data and understanding the breadth of perspectives shared by participants (Braun & Clarke, 2019).

In Phase 2, I used the Social Ecological Theory as a lens for the initial coding process. This theory, which emphasizes the interconnectedness of various levels of influence on an individual's behavior, provided a structured way to categorize the themes emerging from the interviews with the mothers. I began by thoroughly reviewing each interview, noting the unique experiences and perspectives shared by the participants. The goal was to identify recurring patterns and important insights related to different levels of influence that were connected to behaviors and outcomes, so I categorized the themes into five primary levels based on the Social Ecological Model: Individual, Interpersonal, Community, Organizational, and Policy.

The coding process started with a detailed review of the interview transcripts, which I exported into an Excel spreadsheet for better organization. As I read through each transcript, I highlighted sections that stood out — whether because of their emotional significance, their relevance to the study's focus, or the frequency with which similar topics were raised. These highlighted sections included direct quotes as well as more general themes that seemed to emerge across interviews. The quotes and themes offered a clear connection to the mothers' self-efficacy occurring through their lived experiences.

After initially highlighting these key excerpts, I re-read each interview in its entirety to sort the highlighted text into specific categories that aligned with the Social Ecological Model. For example, statements related to personal health

behaviors, beliefs, or attitudes were categorized under the "Individual" level, while themes about relationships with family, friends, or partners were classified as "Interpersonal." Issues related to access to local resources, such as childcare or healthcare, were placed in the "Community" category. Organizational factors, like the role of healthcare facilities or support services, were categorized accordingly, and any references to larger structural influences such as public health policies, insurance coverage, or regulations were assigned to the "Policy" category.

Using Excel allowed me to efficiently separate and track the different codes and findings, which made analyzing trends across the interviews much easier. Throughout each phase, I consulted with an independent researcher, adjusting the codes and coding approach based on our discussions. As I categorized each text segment, patterns and common themes began to emerge, revealing commonalities across the mothers' experiences. This process not only helped me understand the various factors influencing each mother's situation but also enabled me to draw connections between individual experiences and broader social, community, organizational, and policy-related issues. By the end of Phase 2, I had a well-organized database of coded themes, which served as the foundation for deeper analysis in subsequent phases of the study.

In Phase 3, I focused on generating initial themes by thoroughly reviewing the findings from Phase 2 and analyzing the data within my Excel sheet. I closely examined the patterns that emerged across the different layers of the Social Ecological Model (Individual, Interpersonal, Community, Organizational, and Policy). By carefully noting recurring themes, I started to organize the findings into these categories, which helped me identify key aspects of the mothers'

experiences related to breastfeeding education, support, and challenges. This phase helped clarify the connections between individual experiences that were connected to self-efficacy and broader ecological influences.

In Phase 4, I worked on drafting my Findings section by refining and tailoring the Social Ecological Model to better reflect the specific breastfeeding experiences and barriers identified in my rural Missouri sample. This involved aligning participant responses with the model's multiple levels—individual, interpersonal, organizational, community, and policy—and adapting the framework to highlight context-specific themes including *Individual, Familial Relationships, Workplace and Work Relationships, Healthcare Access, Community Resources,* and *State Policies*. By doing so, I was able to more accurately organize and interpret the data through a lens that honors both the theoretical structure and the lived realities of the participants. I adapted the framework to reflect the themes and patterns that resonated most strongly from the participants experiences that were connected to their breastfeeding outcomes and behaviors. I identified several key levels and their corresponding themes that provided a more nuanced understanding of the various factors influencing breastfeeding behaviors and outcomes. Below the levels are provided with more detailed information.

1. **Individual**: This layer encompassed the mental and physical experiences of the mothers prior to and following childbirth. It included their personal histories, such as previous breastfeeding experiences, knowledge-seeking behaviors related to breastfeeding, and personal health factors that could

influence their breastfeeding choices. It also captured their confidence, attitudes, and motivations toward breastfeeding.

2. **Familial Relationships**: The influence of close family members was crucial in shaping the mothers' self-efficacy. This layer focused on interactions with partners, mothers, sisters, grandmothers, and even female cousins. These relationships could either be encouraging or discouraging, based on the family members' views on breastfeeding. For example, some mothers reported receiving significant encouragement from their mothers or sisters, while others felt discouraged or unsupported by family members who either lacked knowledge or held negative views about breastfeeding. Both the verbal support or lack thereof, as well as actions such as helping or caring for the baby while the mother breastfed, were key factors that influenced a mother's confidence and ability to breastfeed.
3. **Work Policies and Work Relationships**: This layer examined the role of the workplace environment in supporting or hindering breastfeeding. It included the relationships with employers and coworkers, particularly how supportive or unsupportive these relationships were in terms of breastfeeding. For example, supportive coworkers or managers who allowed flexible work hours or private spaces for breast milk pumping were pivotal in allowing mothers to continue breastfeeding while managing their work responsibilities. Conversely, unsupportive work environments—such as a lack of space to pump or unsympathetic attitudes from supervisors—often led to early weaning or cessation of

breastfeeding. This layer also explored formal work policies, such as maternity leave and workplace accommodations for breastfeeding mothers.

4. **Healthcare Access**: Access to healthcare resources, particularly lactation consultants and healthcare providers like midwives, OB/GYNs, and nurses, was another critical layer in the model. This layer focused on how accessible or inaccessible professional help was to mothers. The presence of knowledgeable healthcare professionals who could provide guidance and support greatly influenced a mother's ability to successfully breastfeed. In some cases, lack of access to these professionals, whether due to geographic location, insurance barriers, or insufficient healthcare resources, left mothers without the support they needed to overcome challenges.
5. **Community Resources**: The availability of community-based support for breastfeeding was another key theme. This included resources such as breastfeeding support groups, prenatal classes, and educational opportunities specifically focused on breastfeeding. Additionally, the presence of physical spaces, such as nursing rooms in public areas like stores or office buildings, played a crucial role in determining whether mothers felt comfortable and supported in breastfeeding outside the home. The availability of these community resources often made the difference in whether a mother could continue breastfeeding successfully after returning to work or managing other aspects of daily life.

6. **State Policies**: At the policy level, I examined how state and federal policies impacted breastfeeding mothers. Programs like WIC (Women, Infants, and Children) and the Family and Medical Leave Act (FMLA) (which offers unpaid leave) were found as integral in providing financial and job security for mothers who chose to breastfeed. Furthermore, policies like the PUMP Act, which mandates that employers provide paid time and space for breastfeeding mothers to pump, were crucial in supporting mothers who wished to continue breastfeeding while maintaining employment. These policies could either create an enabling environment for breastfeeding or contribute to additional challenges if not adequately implemented or enforced.

By restructuring the Social Ecological Model in this way, I was able to capture a more accurate and detailed portrayal of the multiple and interconnected influences on mothers' breastfeeding self-efficacy. Each level — whether individual, familial, workplace, healthcare-related, community-based, or policy-driven — played an integral role in either facilitating or hindering breastfeeding behaviors and outcomes. This approach allowed me to more effectively highlight the complex dynamics at play and demonstrate how support systems (or the lack thereof) at each level significantly impacted a mother's ability to successfully breastfeed. Across the findings, I discovered that mothers discussed complex, multifaceted affordances and challenges with breastfeeding. Their descriptions of their experiences were interconnected across levels.

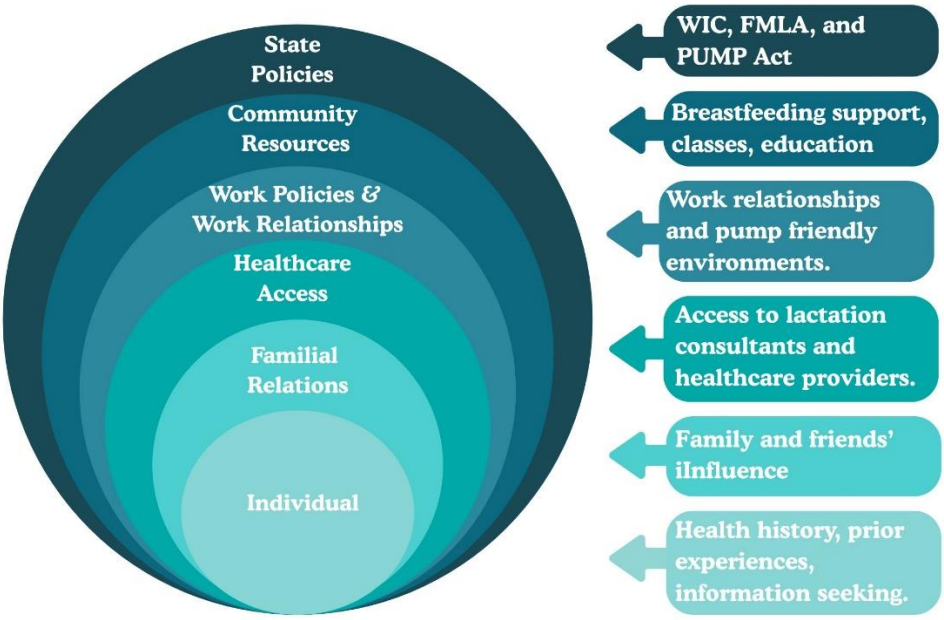
Two themes emerged from the analysis: *Theme 1: Lack of Support Systems Contributed to Early Cessation and Theme 2: Support at Different Ecological Levels Enhanced Self-Efficacy*. As the themes emerged, it allowed me to delve into the mothers' experiences across the ecological layers. This approach proved more effective in capturing the diversity of experiences and in showcasing the significant impact that each layer of support — whether personal, relational, or institutional — had on a breastfeeding behavior and outcomes. It also ensured that the voices of the participants remained central to the analysis, highlighting how different levels of support and education directly influenced their decisions and experiences around breastfeeding. Ultimately, this categorization allowed for a clearer narrative, providing valuable insights into the varying degrees of support mothers received at different stages of their breastfeeding journey, while also allowing the richness of their individual experiences to shine through. Figure 7 illustrates the Social Ecological Model developed from this study, highlighting the key levels of influence identified through the research findings.

**Figure 7**

*Social Ecological Model of Breastfeeding Influences Identified in the Study*

This model highlights key levels of influence identified in the study, reflecting the lived experiences of breastfeeding mothers in rural Missouri.

Adapted from Golden & Earp (2022)




In phase 5, I did an ongoing process of comparison across data segments that allowed for a deeper understanding of the relationships between codes and themes, ensuring that the final themes were robust and representative of the data (Braun & Clarke, 2006). This narrative approach enhanced the credibility and trustworthiness of the research findings and offered a rich, contextualized understanding of maternal experiences with breastfeeding in rural Missouri (Nowell et al., 2017). By adhering to the structured phases of thematic analysis, as proposed by Braun and Clarke (2021), I conducted a rigorous and systematic exploration of the data, generating a full dissertation on the breastfeeding experiences of rural mothers. Thematic analysis is a flexible and adaptable method, valued for its ability to provide in-depth insights into complex qualitative data. Its structured yet flexible approach makes it suitable for exploring diverse research questions across various disciplines.

Throughout the analysis process, I remained mindful of the principles of reflexivity and researcher transparency (Finlay, 2002). The Social Ecological Model (Bronfenbrenner, 1979) was instrumental in contextualizing the findings. This model allowed for a multi-layered examination of how individual, interpersonal, community, and societal factors interact to influence one's breastfeeding experience. By examining the data within this broader context, I was able to offer a more comprehensive understanding of the factors that support or hinder breastfeeding in rural Missouri.

# Chapter 4: Findings

First, I present the survey data that answers research question 1, What are the SEM layers that Missouri women identify as impacting their breastfeeding behaviors and outcomes within Missouri? Are the SEM layers within the state the same as within two rural focal counties (Bates and Vernon)? Next, I present the qualitative findings that answers RQ2, in which I asked, How does the SEM layers individually and/or collectively impact breastfeeding behaviors and duration?

**Childbirth.** As shown in Table 5, 78% of participants reported having either one or two live births in Missouri. Table 5 shows that out of the total participants, those from the counties of interest, were slightly lower when compared with the overall state with 77% in Bates, and 67% in Vernon reporting one or two live births. As shown in Figure 6, 93% of participants at the state level reported having breastfed. Rates were similarly high—or even higher—in the counties of interest, with 91% of respondents in Bates County and 95% in Vernon County reporting that they had breastfed, either currently or in the past.

**Table 5. Live Births**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
|---|---|---|---|---|---|---|---|
| Missouri | 36% | 42% | 12% | 6% | 1% | 1% | 2% |
| Bates | 55% | 23% | 5% | 5% | 0% | 9% | 5% |
| Vernon | 19% | 48% | 29% | 5% | | | |

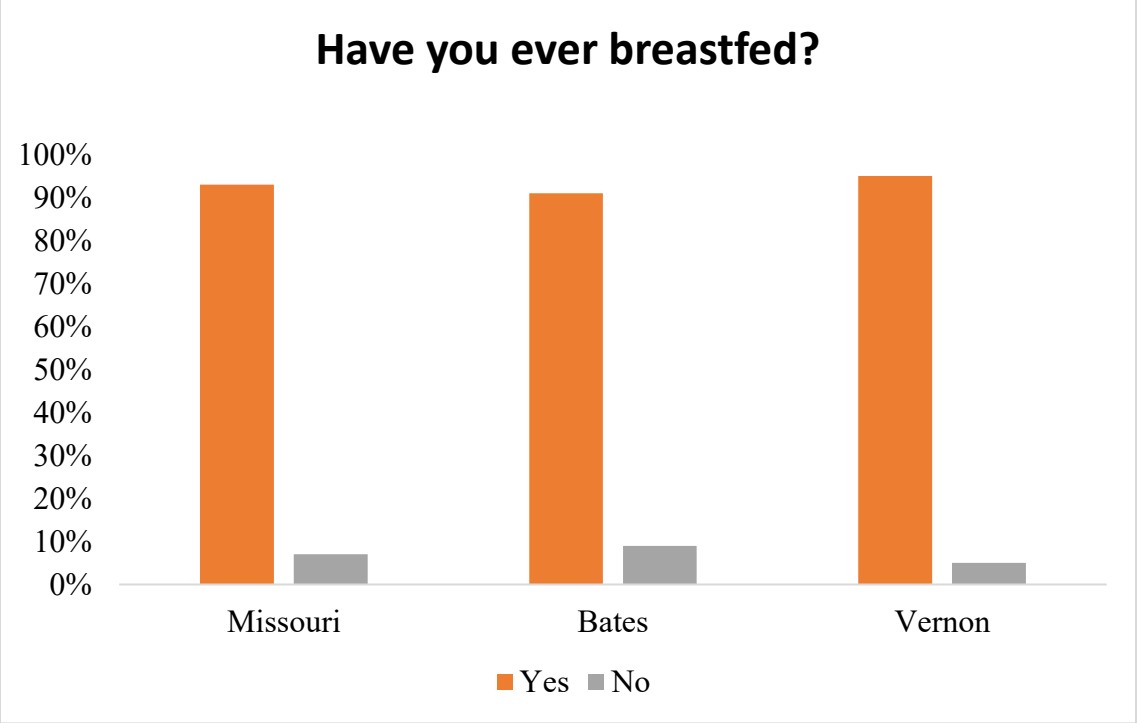
**Breastfeeding Duration.** As illustrated in Figure 8, 93% of participants across Missouri chose to breastfeed for varying durations, including less than 6 weeks, 6 weeks to 3 months, 3 to 6 months, 6 to 12 months, and 12 months or longer. The survey

revealed that most mothers had either breastfed or were currently breastfeeding. Overall, the participants surveyed stated that they had some level of experience (Missouri (93%), Bates (91%), and Vernon (95%) with breastfeeding, even though prior breastfeeding experience was not a requirement for participation. This insight was instrumental in refining the focus of the study and helping to narrow the participant pool for the second phase, qualitative analysis.

**Figure 8**

*Breastfeeding Experience Among Participants*

Participant responses to "Have you ever breastfed (now or in the past)?" showing prior or current breastfeeding experience.

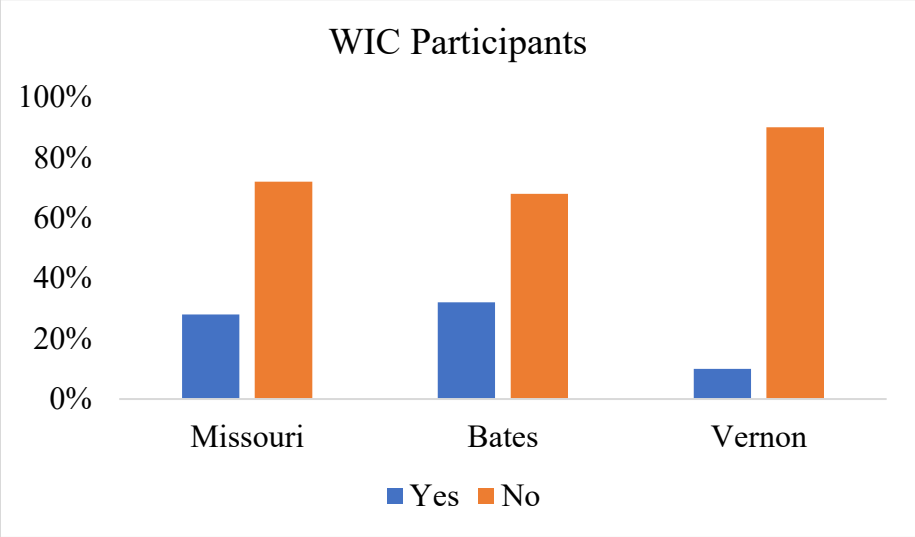



**WIC.**

Figure 9 shows the percentage of mothers who reported meeting the WIC income guidelines and also utilized WIC services. The participation rates were lower than expected for women who were eligible for the program. These rates were as follows: 28% at the state level, 32% in Bates County, and 10% in Vernon County.

**Figure 9**

*WIC Eligibility and Utilization Among Mothers*

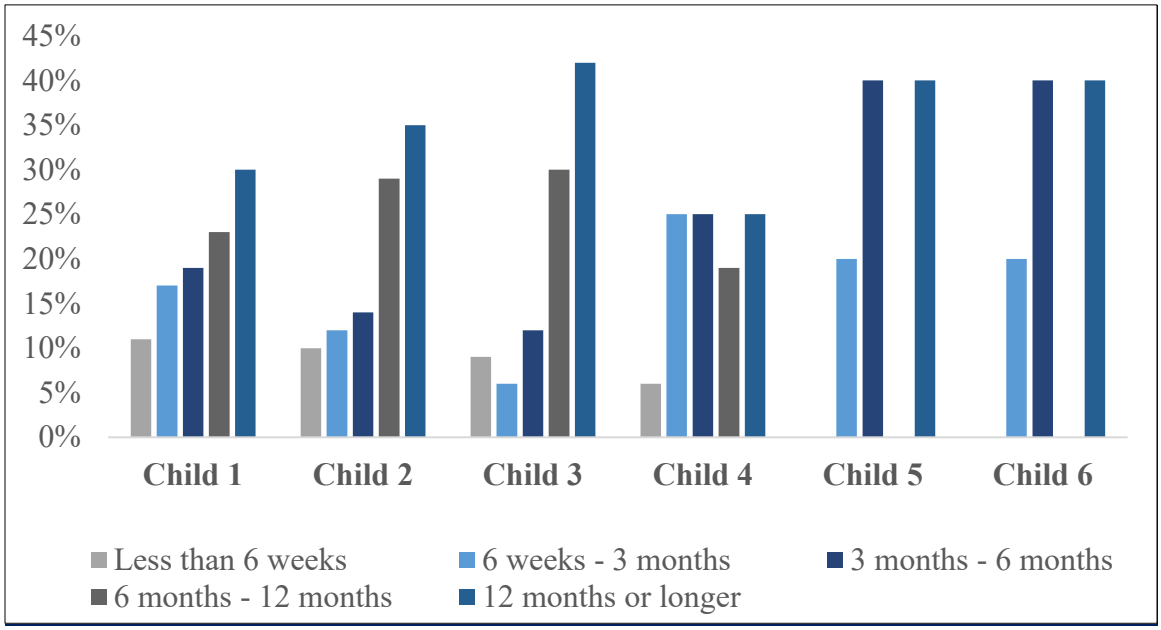



The duration of breastfeeding varied across multiple children, with an increasing trend towards longer breastfeeding periods for each subsequent child, as shown in Figure 10. For Child 1 (146 respondents), the majority of mothers breastfed for extended periods. Specifically, 30% breastfed for 12 months or longer, 23% for 6 to 12 months, 19% for 3 to 6 months, 17% for 6 weeks to 3 months, and 11% for less than 6 weeks. This distribution demonstrated breastfeeding for longer durations as number of children increased.

**Figure 10**

*Increasing Breastfeeding Duration Across Subsequent Children*

Breastfeeding Duration per Individual Child.




For Child 2 (93 respondents), a similar trend emerged. Here, 35% breastfed for 12 months or longer, 29% for 6 to 12 months, and 14% for 3 to 6 months. Smaller groups, 12% and 10%, breastfed for 6 weeks to 3 months and less than 6 weeks, respectively. This indicates that many mothers preferred longer breastfeeding durations, similar to the trend seen with Child 1.

For Child 3 (33 respondents), the trend toward longer breastfeeding became even more pronounced. Forty-two percent breastfed for 12 months or longer, while 30% breastfed for 6 to 12 months. Smaller percentages breastfed for 3 to 6 months (12%), 6 weeks to 3 months (6%), and less than 6 weeks (9%). By the time mothers reached their third child, the preference for extended breastfeeding durations became more evident.

For Child 4 (16 respondents), the breastfeeding duration was more evenly distributed. While 25% breastfed for less than 6 weeks, 25% for 3 to 6 months, and 25% for 12 months or longer, 19% breastfed for 6 to 12 months. This group displayed a relatively balanced distribution of breastfeeding durations, with a significant portion breastfeeding beyond 12 months.

For Child 5 (5 respondents), 40% of mothers breastfed for both 3 to 6 months and 12 months or longer, with the remaining 20% breastfeeding for 6 weeks to 3 months. This indicates a preference for medium-to-longer breastfeeding durations for Child 5.

For Child 6 (5 respondents), the trend mirrored that of Child 5, with 40% breastfeeding for 3 to 6 months and 40% breastfeeding for 12 months or longer. No mothers breastfed for less than 6 weeks, while 20% breastfed for 6 weeks to 3 months. Once again, this highlights a strong preference for longer breastfeeding durations, particularly for 12 months or more.

In summary, breastfeeding durations generally increased with each subsequent child, with a significant shift toward longer breastfeeding periods, especially for children 3, 5, and 6. This suggests that as mothers gain more experience, they tend to breastfeed for longer durations, possibly influenced by factors that support their self-efficacy.

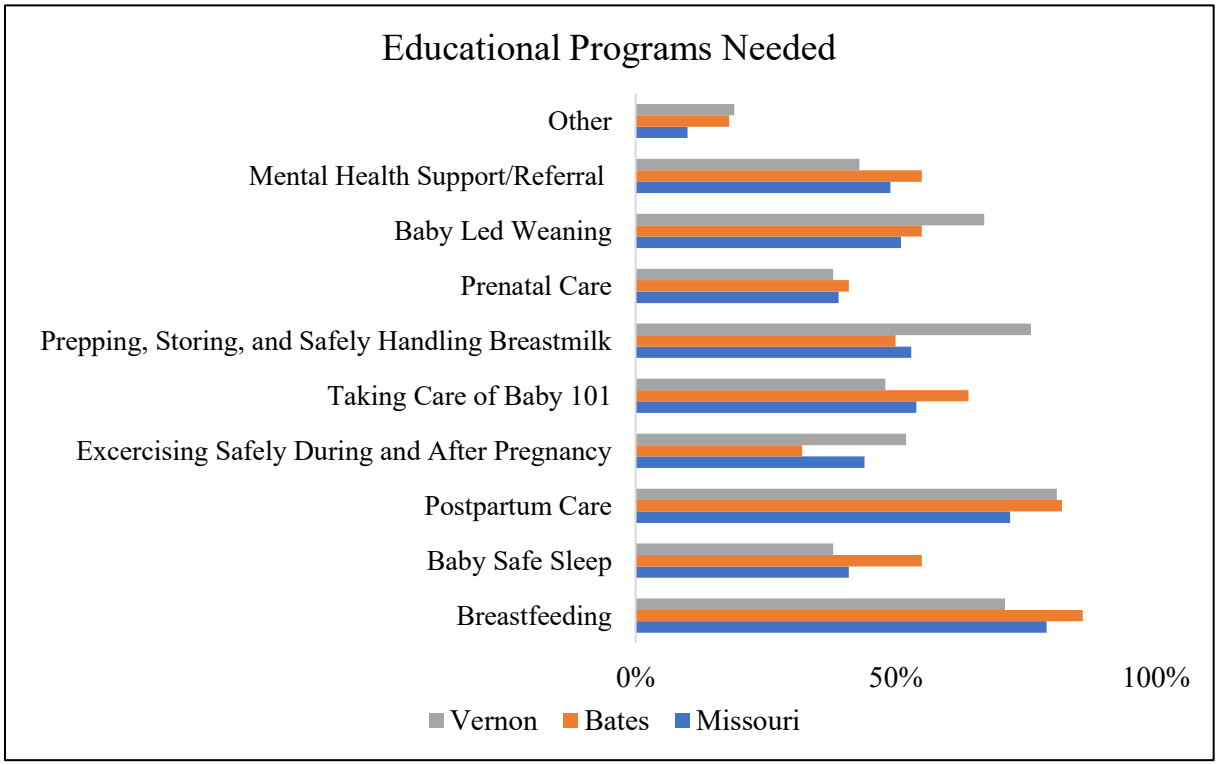
**Breastfeeding Educational Needs and Preferences**

Participants identified key areas where educational programming would be most beneficial, with learning more about breastfeeding emerging as the top priority with 79% of respondents, illustrated in Figure 11. Other topics included postpartum care (72%) and safely handling breastmilk (53%). In Bates County, breastfeeding remained the top requested topic (86%), followed by postpartum care (82%) and baby-safe sleep (55%). In

Vernon County, breastfeeding was again the most sought-after topic (71%), followed by safely handling breastmilk (76%) and baby-led weaning (67%). Mental health support and referrals were also seen as important, with about 50% of parents in both Missouri and Bates County expressing interest. Overall, these findings suggest that parents in rural Missouri prioritize breastfeeding, postpartum care, and infant safety, while also showing growing interest in mental health support and baby-led weaning.

**Figure 11**

*Educational Priorities Identified by Participants*




**Support and/or Availability of Informal Education for Breastfeeding**

Participants shared who supported them while breastfeeding, Figure 12 and why they chose to breastfeed, Figure 14. Participants often relied on their personal networks, including spouses, family members, and friends. For example, in Missouri, (65%), and

specifically 50% in Bates and 65% in Vernon counties, each county reporting that their spouse was their main source of breastfeeding support. Support refers to the emotional, physical, and practical assistance provided to breastfeeding individuals. This can come from a variety of sources, including family members, friends, healthcare providers, lactation consultants, or peer support groups. Support can include things like encouragement, helping with positioning and latching, offering rest or nutritious meals, or simply being present to listen and affirm the parent's experience.

Informal education involved learning that occurs outside of structured, formal settings like classes or workshops. For breastfeeding, this included receiving tips and guidance from other parents, watching videos or reading online articles, attending peer-led support groups, or learning through one's own experience. The responses identified that informal education about breastfeeding was conversational and experiential, rather than taking a birthing class or as curriculum based.

**Figure 12**

*Sources of Support During Breastfeeding*

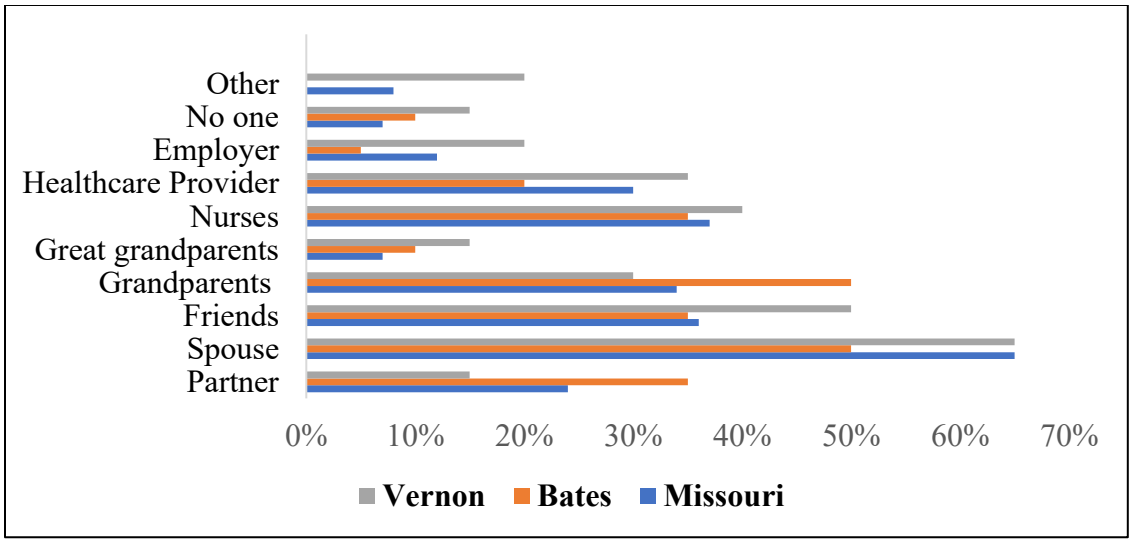


Figure 10 shows the varying levels of support for breastfeeding those mothers received across Missouri, Bates County, and Vernon County, Supports occurred through providing information as well doing dishes, house chores, cleaning, diaper changes, bringing necessities to the mother (like food and water), and cleaning breast pump pieces. In Missouri, the most common sources of support were spouses (married) (65%), followed by nurses (37%) and healthcare providers (30%). A smaller percentage of mothers received support from partners (single with a partner) (24%), friends (36%), and grandparents (34%), with fewer mothers reporting support from their employers (12%) or no support at all (7%). When combined 89% identified their source of support came from a partner or spouse.

In Bates County, spouses (50%) and maternal and/or paternal grandparents (50%) were the primary sources of support, while nurses (35%) and healthcare providers (25%) also played significant roles. Fewer mothers in Bates County reported receiving support from employers (5%) or having no support at all (10%).

In Vernon County, spouses (65%) and healthcare providers (40%) were the top sources of support, with a significant number of mothers also receiving help from friends (50%) and grandparents (30%). Support from employers was slightly higher in Vernon County (20%) compared to Bates County, while the percentage of mothers receiving no support (15%) was higher than in both Missouri and Bates County.

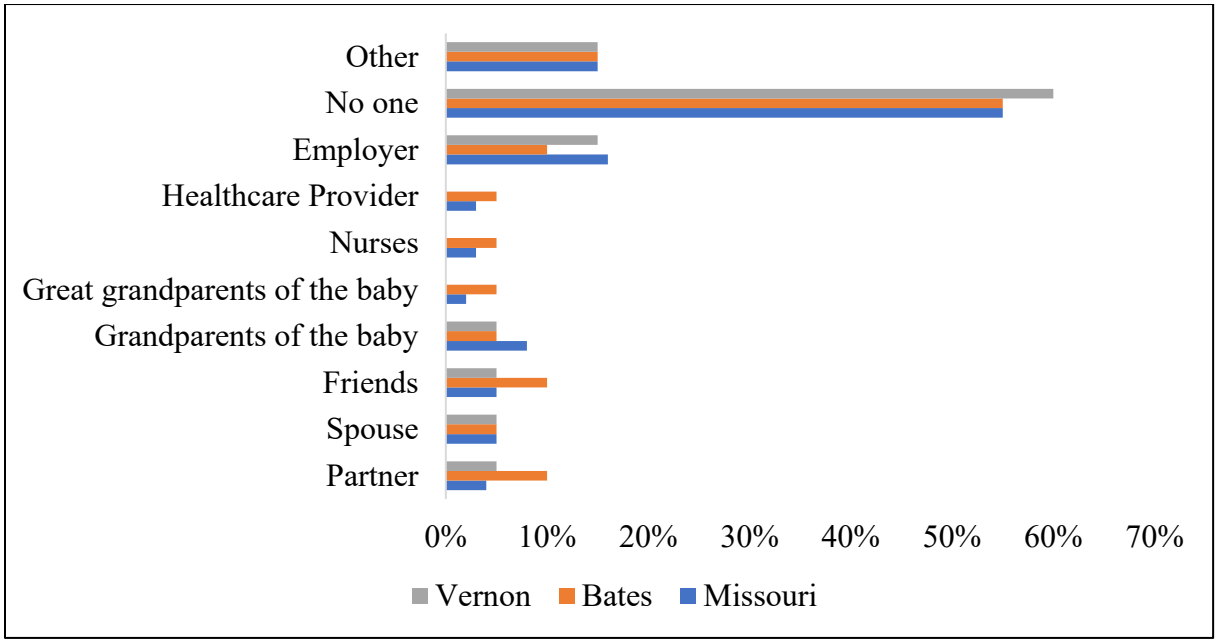
**Pressures to Stop Breastfeeding**

The survey revealed that elements within a mother's social and environmental context can make breastfeeding more difficult (Figure 13). Overall, 55% of Missouri mothers indicated that no one made breastfeeding harder while 16% of mothers identified

employers as a significant source of difficulty, and 8% cited the baby's grandparents as obstacles. Five percent of mothers reported challenges stemming from their spouse or friends.

**Figure 13**

*Factors That Made Breastfeeding Hard to Continue*

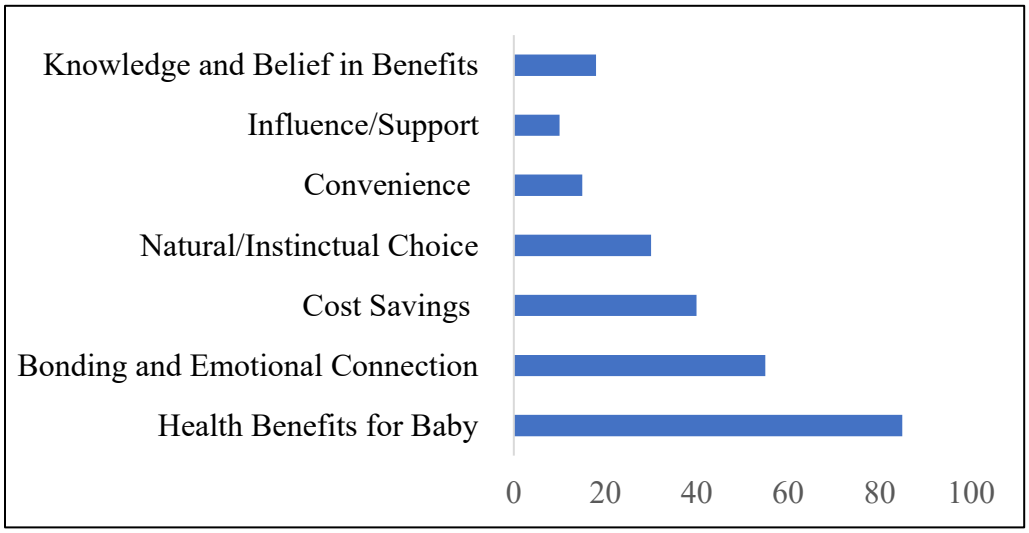



Bates County reflected a similar pattern, with 55% also reporting no external challenges; however, 10% of Bates County respondents identified partners, friends, or employers as sources of difficulty. Vernon County had a higher percentage of mothers (60%) reporting no difficulties, but 15% indicated that their employers or other factors made breastfeeding harder. The involvement of partners, spouses, grandparents of the baby, and friends was less prevalent in Vernon, with each group impacting 5% of mothers. These findings highlight that while most mothers experience no difficulty, some mothers face significant breastfeeding challenges, often linked to their work environment or family dynamics.

These themes often overlapped, with many participants citing multiple reasons for choosing to breastfeed, indicating the complex and multifaceted nature of maternal decision-making. For example, responses frequently combined references to health benefits with emotional bonding or cost savings, underscoring how practical, emotional, and cultural factors interact. The consistency of certain themes across a majority of responses—particularly the emphasis on infant health, bonding, and financial considerations—suggests that breastfeeding is often understood by rural mothers not only as a biological act but also as an intentional, values-driven practice. This thematic diversity reflected a blend of personal beliefs, lived experiences, and external influences, all of which contribute to breastfeeding self-efficacy and maternal identity.

**Figure 14**

*Reasons for Breastfeeding: Thematic Analysis of Open-Ended Responses (Q69)*



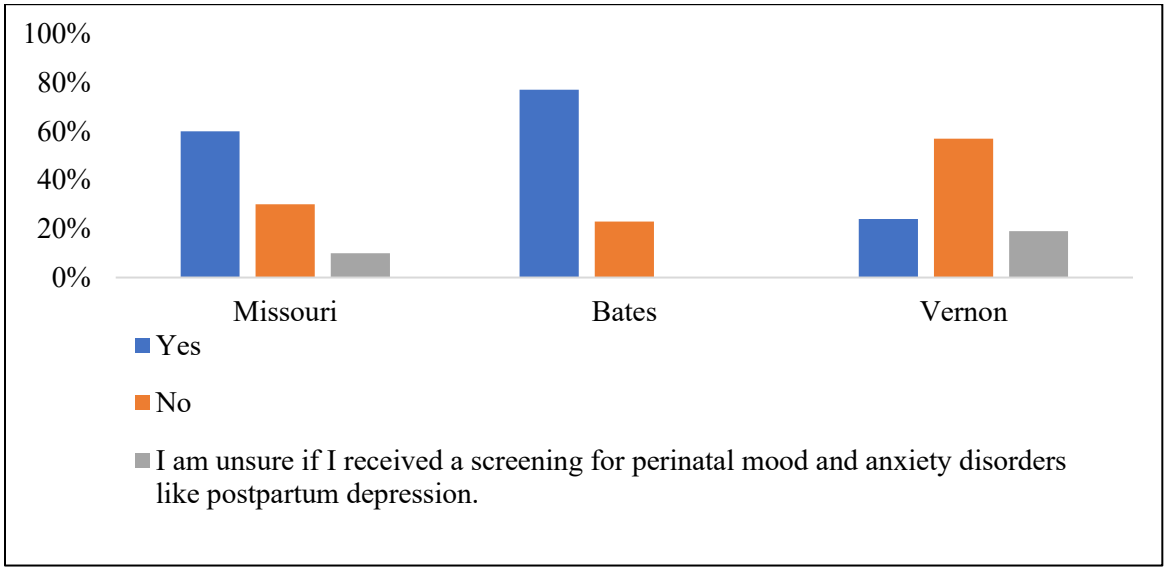

*Note.* This thematic bar chart displays the frequency of reasons cited by respondents for choosing to breastfeed, based on qualitative analysis of open-ended responses to Question 69.

## Qualitative Themes

I used the survey results to identify and elucidate key SEM layers that emerged from the survey data. These trends guided my focus in the qualitative interviews, allowing me to explore in more detail the personal breastfeeding outcomes and behaviors across the SEM layers. Additionally, the demographic data highlighted rural areas, such as Vernon County (Figure 15), which showed lower screening rates for perinatal mood and anxiety disorders, prompting me to dive deeper into how these disparities affected participants' well-being, which ultimately appeared to impact their self-efficacy. By aligning the qualitative findings with the survey data, I was able to capture challenges and supports mothers face, providing richer insights into the nuances behind the numbers.

**Figure 15**

*Perinatal Mood and Anxiety Disorders Screening*




From this focus, I found two themes that I titled Theme 1: Lack of Support Systems Contributed to Early Cessation and Theme 2: Support at different ecological levels enhanced self-efficacy that I present below.

**Theme 1: Lack of Support Systems Contributed to Early Cessation**

Three of the twelve participants, Brooke, Stephanie, and Ashley stopped breastfeeding between 4 and 13 weeks postpartum. Despite entering motherhood with a strong desire to breastfeed, these mothers described significant barriers across multiple levels—personal, relational, systemic, and environmental. Their discussions reflected how even well-intentioned and motivated women can struggle to breastfeed without comprehensive support.

***Individual factors***

Each participant within this theme initially described optimism and preparation for breastfeeding, as Ashley stated: "not just for the health benefits but also because I thought it would help me bond with my baby." The women took steps to prepare, which included purchasing supplies, such as breast pumps, milk storage containers, specific food products created for breast feeding women, and recommended creams for sore and cracked nipples from breastfeeding. As Brooke said, "I wanted to be ready for anything." As Stephanie, a nurse, stated: "I was pretty set on doing it. I felt confident because of my background—I thought I knew what to expect." The women all expressed that they felt prepared to breastfeed prior to giving birth.

However, when confronted with physical, emotional, and mental stress after having their babies, their self-efficacy towards breastfeeding began to erode. Each described their attempts to breastfeed as feeling as though they were "drowning." They each described constantly questioning their knowledge and abilities to breastfeed as well as pain, exhaustion, and isolation. All three mothers were first-time parents with no prior

breastfeeding experience. All levels of the socio-ecological model appeared to erode their self-efficacy for breastfeeding.

### *Familial Relations*

Brooke, Stephanie, and Ashley described inconsistent support from family members as well as described how their family members undermined their determination to breastfeed. Both Ashley and Brook found unsupportive family members that continuously questioned them about why they were trying to breastfeed. For example, Brooke was adopted but had a relationship with her biological family. She described her adoptive family as normalizing and encouraging breastfeeding; however, would provide inconsistent advice which she described as "overwhelming." In addition, her biological family consistently challenged her choice to breastfeed. As she stated. "My [biological] grandma made it hard" in which she described how her grandmother consistently required Brooke to defend her choice to breastfeed calling her attempt to breastfeed as "weird." This added to Brooke's exhaustions, as she stated, "I didn't have the energy to explain or defend myself all the time."

Stephanie described a lack of practical support with her partner. While her partner expressed supportive sentiments for breastfeeding, he offered no physical support, such as washing bottles or taking a feeding turn during the night so Stephanie could take a night shift break. As she stated, "My husband was supportive in words, but not in action…it was all on me." Overall, all three women described a lack of family support in their choice to breastfeed.

### *Healthcare Access*

All three women experienced critical gaps in medical care that directly impacted their ability to breastfeed. Brooke described an unplanned C-section that resulted in airlifting her baby to a hospital with a NICU. She described how she felt this sudden change in her birth plan prevented her from being able to immediately bond with her newborn through immediate skin-to-skin contact and early latching. As Brooke stated: "It was so sudden. I didn't even get to hold him before they took him. That separation just… threw everything off." Due to this separation, her milk supply dropped, and she had no health care access within her community. As she stated, after her baby was discharged from NICU, there was no medical follow-up, and she had no medical support to re-establish breastfeeding. As she described, "I felt abandoned…" Without support, she struggled physically and emotionally to breastfeed. As she stated: "It all hit me at once, like, what's the purpose of me doing this? I felt like I was failing. I can't do anything right." The deviation from her birth plan and the lack of medical support after she and the baby were discharged took such an emotional toll that she questioned her abilities to breastfeed, as well as parent. From Brooke's perspective, all health care support stopped once mother and baby are discharged. As she stated "No one checked in. No one followed up." She felt she had no medical support once she arrived home.

Stephanie's birth plan went as anticipated, but she faced physical challenges in her attempts to breastfeed. As she stated "My baby just wouldn't latch. I kept saying [to my doctor] something felt off." It was not until weeks later, in which Stephanie continued to struggle to try to breastfeed, that her baby was diagnosed as unable to latch due to tongue and lip tie (a medical diagnosis in which the tissue connecting the tongue to the floor of the mouth is unusually tight or short, restricting tongue movement. Present at

birth, this condition can interfere with breastfeeding by making it difficult for the baby to latch effectively (Mayo Clinic, 2023). This delay in diagnosis added emotional strain to Stephanie, who continuously questioned herself during this time and assumed that she was "doing something wrong" since her baby was unable to latch to breastfeed.

Ashley also described latching issues. For her, this took a physical toll. She also described feeling emotionally isolated which further affected her mental health. She discussed how the notion of breastfeeding is described as "natural" indicates that it is supposed to occur without issue. However, when her baby would not latch, she did not have anyone she could turn to for help. As she described, this issue, along with the physical and mental toll, she stated that her inability to do this "natural" process eventually "wore me down" so that she stopped attempting to breastfeed. By the time her doctor figured out why her baby was not latching, she "was already supplementing and my [milk] supply had dropped."

***Work Policies and Work Relationships***

Brooke did not return to work after her maternity leave, but her husband did return to work. Once she was alone during the day and had no structure, support, or schedule to pump or nurse, she was unable to continue breastfeeding. While Stephanie and Ashley breastfeed during their maternity leaves, when both women returned to work following their maternity leaves, their work cultures constrained their attempts to pump milk. They both described how they were uninformed about workplace policies regarding pumping breastmilk and their work did not support breaks to pump. As Stephanie said, "I knew I had rights. But in my unit, no one else pumped. I didn't want to be the only one taking breaks." She explained how taking extra breaks made her feel guilty due to her

work culture. She described how her colleagues noticed when each other are gone and that this "makes trouble." Ashley worked as a teacher and found it logistically difficult to find time to pump. She initially attempted to use her lunch break or her planning period to pump; however, this time was also the common time in her school to meet with students or to have meetings with other teachers. When her planning time was used for meetings with others, she was unable to pump, which led to early cessation of breastfeeding. Overall, for the three women in this theme, it was a spouse returning to work and/or their return to work with a workplace culture that discouraged them from breastfeeding.

***Community Resources***

The three women discussed that community resources, support, and/or access to breastfeeding education was non-existent for them. As Ashley stated there is "no one to sit with you and show you what to do." Due to the lack of resources, Stephanie depended on the social media platform TikTok to research breastfeeding. She described that this included a mix of supportive resources as well as increased her self-doubt about her ability to breastfeed. While the platform did provide her breastfeeding advice, she also described that the advice came from "women with freezers full of milk." Seeing how much milk these women were producing made her anxious about her own milk production. Without anyone in her community to seek advice from, she assumed that she was not producing enough milk.

***State Policies***

While federal and state laws support breastfeeding, participants felt these policies lacked practical enforcement. As Stephanie explained, “Just because it’s a law doesn’t mean it’s realistic. If the culture at work doesn’t support it, it doesn’t matter [if it’s a law].” Each of the women in this theme found the laws ineffective, and did not actually support breastfeeding. They saw these as laws that only existed “on paper” and not “in reality.” They each described being unable to take breaks to pump without falling behind in their jobs, despite the existence of laws that provided them the time to pump in their workplace.

***Conclusion***

Across Brooke, Stephanie, and Ashley, the early cessation of breastfeeding was not due to a lack of knowledge, willpower, or interest. Rather, it reflected a broader failure of a socio-ecological system. Each woman faced challenges across their social ecological models that eroded their self-efficacy for breastfeeding. Furthermore, each women expressed that they felt as though they “failed” by being unable to breastfeed or continue to breastfeed when returning to work. They also discussed that they were attempting to make peace their “failure” to breastfeed. As Ashley reflected, “Give yourself grace… it’s a lot harder and more difficult than that.” Ashley’s sentiment reflected what was revealed across the three women – the perception that it is “natural” and should “naturally occur” is a misnomer and revealed their individual truths - breastfeeding success depended not just on their own individual commitment, but on the environment in which a mother is trying to meet this outcome.

**Theme 2: Support at different ecological levels enhanced self-efficacy**

Nine out of twelve participants were either currently breastfeeding or had breastfed their babies, with weaning occurring 12 months or later. The mothers included Devon, Melissa, Jessica, Maggie, Rachel, Kelly, Jenna, Emma, and Ivy. Each of these mothers encountered support across multiple levels of the Social Ecological Model. These support systems were found at various levels, including interpersonal relationships, prior breastfeeding experience, informal education utilized, and community resources that the mothers sought out.

***Individual Factors***

For nine of the twelve mothers, breastfeeding was far more than a feeding method—it was a deep personal journey shaped by their emotional resilience, past experiences, values, and internal motivations. Their interviews reflected a powerful interplay between knowledge, self-trust, cultural expectations, and the lived reality of motherhood within rural and resource-constrained contexts. While each woman's experience was uniquely her own, common threads emerged: the desire to nourish and bond with their babies, the struggle to balance societal ideals with personal well-being, and the ability to adapt when breastfeeding became emotionally or physically taxing.

Among the nine women, six were experienced breastfeeding mothers, each bringing an already established self-efficacy for breastfeeding. Their previous experiences ranged from limited exposure to breastfeeding to nursing a child for four years. Their motivation to breastfeed extended beyond the health benefits, which they described as "essential" and "beyond natural." They also emphasized the emotional closeness breastfeeding fostered and its economic advantages when compared to

purchasing formula. Yet, despite their determination, each woman encountered emotional hurdles. These varied experiences served as both a foundation and a lens through which they approached continuing to breastfeed their infants. For instance, Devon drawing on her successful experiences breastfeeding her first child, felt confident to breastfeed her second child. As she stated, “I knew what I was getting into.” She discussed that she also used online resources that helped her, but noting the irreplaceable nature of in-person support.

Across the women in this theme, prior breastfeeding experience emerged as a critical factor in their success breastfeeding a second child. As Maggie stated, “I knew what to expect after my first baby, and that helped me stay committed” to breastfeed her second child. Her sentiment was echoed across the participants as the women credited improved outcomes due to the lessons learned from prior experiences. Kelly, for instance, recounted how her first child was born during the COVID-19 pandemic — a time of extreme isolation and limited support. Kelly had little familial support with her first child — her mother had never breastfed — she found her self-efficacy for breastfeeding grew through experience. As she stated. “I just didn’t have the knowledge or guidance,” with her first child which she said resulted in early weaning. However, with her second child, Kelly approached breastfeeding with renewed determination, fortified by her prior experience.  As she stated, “This time, I knew what to expect. I felt more confident,” illustrating how her prior experience helped fill a gap left by an absence of resources.

Emma's motivation, on the other hand, was deeply rooted in cultural and familial traditions. "Breastfeeding was something my family always did. I grew up knowing it was best for the baby, so there was no question for me," to breastfeed she explained. Her unwavering belief in breastfeeding reflects the powerful influence of intergenerational norms and identity on maternal health behaviors. For Emma, breastfeeding was not just a health choice—it was an expectation and a continuation of her perceived family values.

Yet not all individual factors were grounded in confidence or custom. Jenna, a nurse with clinical training, found her real-life experience starkly different from her expectations. As she stated, "I thought breastfeeding would be this peaceful, ideal moment, but it was far from that.". Despite her technical knowledge, Jenna discussed her struggle with physical pain, sleep deprivation, and the emotional toll she felt during breastfeeding, such as stress about her infant's nutrition and her exhaustion. Yet, she remained committed to continuing to breastfeed. Her motivation stemmed from a belief in the health benefits of breastmilk, both for her baby's development and immune protection, and a personal sense of responsibility to give her child the best start possible. She referred to her nursing professional background to reinforce her beliefs

What emerged as different between these women and those in theme 1 was also a flexibility to supplement breastfeeding with formula and still retain their breastfeeding self-efficacy.  For example, Melissa breastfed her first two children and initially pressured herself to exclusively breastfeed again. Over time, however, she shifted her stance to a more flexible perspective. As she reflected "it

doesn't make you less of a mom [if you do not exclusively breastfeed]," as she described her decision to combine breastfeeding with formula. She made this decision to reduce the overwhelming stress she was experiencing, better manage her time and energy, and ensure her baby was adequately nourished during periods when breastfeeding alone felt unsustainable.

Maggie also transitioned to combination feeding using both formula and breastfeeding after becoming emotionally depleted from exclusively breastfeeding. She made this decision to relieve the pressure she felt while still continuing to provide breastmilk — a balance that honored both her physical limits and emotional well-being. Influenced by her mother's regrets about formula feeding in the1990s and her own inability to breastfeed her first child, Maggie was discussed her determination to have a positive breastfeeding experience with her second child. As she explained, "I wasn't giving up, "when she chose to supplement with formula, "it was what I needed to keep going." For Maggie, combination feeding became a sustainable way to meet her infant's needs while preserving her mental health and reclaiming an experience she had previously missed. Like Melissa, Maggie also reflected the importance of adaptability — recognizing that maternal well-being is essential to sustaining a nurturing breastfeeding relationship.

***Familial Relationships***

For the women in this theme, supportive family relationships, whether from partners, parents, or extended family played a central role in shaping their breastfeeding outcomes. Across their narratives, this support came in many forms: emotional

encouragement, hands-on help, intergenerational modeling, and subtle forms of affirmation. Three key types of support emerged: partner involvement, generational influence, and the emotional reassurance of shared experience.

Partner involvement was instrumental to success. Melissa discussed the importance of a supportive partner. She described how he initially preferred formula feeding, which she described as creating early tension over her decision to breastfeed, but over time he became more supportive. As Melissa said, “He came around eventually,” reflecting on how growing understanding within her partnership made it easier to transition to combination feeding. Ivy discussed how this early support made a critical difference: Ivy reported that her mental health postpartum was relatively stable**,** noting only mild sadness rather than more severe symptoms of anxiety or depression. She attributed this in large part to the strong support she received from her husband: “He was up with me in the middle of the night, changed diapers, did the laundry… he stayed home for a couple of weeks with me. That was really a big help.” His hands-on involvement during those early weeks helped buffer the emotional stress of new motherhood. Similarly, Jessica emphasized how her partner’s active role reduced her sense of isolation. “He just kept showing up. That made me feel like I wasn’t doing this alone,” she said, underscoring how emotional presence mattered as much as practical help.

However, even though partners were supportive, they also held misconceptions about breastfeeding. For example, Ivy discussed that her partner was supportive, though tensions sometimes arose: “If I didn’t have enough milk, he’d say I needed to work harder… I was like, you don’t understand—pumping every two hours, freezing milk, washing parts—it’s a lot.” Since their small rural community had no resources for him to

understand how breastmilk accumulated, she had to explain to him. She called the early days of breastfeeding as "in the trenches." However, Ivy remained committed stating *"*The way it [breastfeeding] can heal you and help you have that bond is what I really wanted."

Support from mothers and grandmothers also shaped breastfeeding decisions. Maggie was influenced by her own mother's reflections on not breastfeeding in the 1990s: "She told me she wished she had done it. That really stuck with me." That expression of regret became a motivating factor for Maggie to try breastfeeding herself. For Emma, the influence of family was less encouragement and more about cultural inheritance. "Breastfeeding was something my family always did," she stated. "I grew up knowing it was best for the baby, so there was no question for me." Her mother's lived example, combined with her consistent encouragement, created an environment where breastfeeding was viewed as both natural and expected. "She helped a lot when things got tough," Emma added, pointing to the value of hands-on support as well.

Overall, family support through partner or extended family emerged as a powerful enabler of breastfeeding persistence. Whether it came through partner help, or maternal encouragement, this support provided the reassurance, rest, and resilience to continue breastfeeding. Their experiences highlight that breastfeeding requires support from others.

***Work Policies and Work Relationships***

The workplace was a pivotal arena for breastfeeding continuation. The ability to continue breastfeeding after returning to work was also challenging for the women in this theme, as those women in theme one discussed. The ability of

the women within this theme to continue to breastfeed depended on a combination of formal policies, physical work environments, employer attitudes, and self-advocacy.

Devon and Melissa exemplified contrasting experiences shaped by their work settings. Devon worked full-time in an office that lacked privacy features, such as window blinds. However, Devon was aware of the national and state policies regarding breastfeeding, and she advocated repeatedly for her legally entitled pumping breaks. As she stated: "Employment support [for pumping] is eons behind," critiquing her workplace's attempt to neglect laws designed to protect breastfeeding mothers. She discussed that policies exist in theory but not in practice. She remained persistent to secure the accommodations she was entitled to in her work environment. However, Devon also discussed that this was emotional labor that she had to do to secure her rights under law. She discussed that this was exhausting, but necessary to maintain breastfeeding her child.

Melissa described a more supportive experience. As a school counselor, she benefited from a private office, a flexible schedule, and access to on-site childcare. These factors significantly reduced her stress and made it easier to incorporate pumping and feeding into her daily routine. "Having my own office made it easier to take breaks when needed," she noted recognizing her situation as an exception, acknowledging that many educators do not have such autonomy or support. Melissa contrasted her experience with that of classroom teachers who often face rigid schedules and limited coverage options. This was seen with Kelly, who was a classroom teacher, so faced significant logistical barriers. She

discussed that she lacked formal accommodations and had to pump in improvised spaces. For example, empty classrooms that she could use to pump over her lunch break. But as a result, she stated: “I didn’t get to eat lunch with my teacher friends... I just was like, isolated, almost.” To navigate this challenge, Kelly applied to become a librarian specialist within her school which offered more flexibility and fewer pumping sessions, leading to a noticeably improved experience.

However, even with similar facilities, such as pumping rooms, the women still discussed feeling rushed and pressured return quickly from pumping, highlighted those structural accommodations, while necessary, are not always sufficient to relieve the psychological strain of balancing breastfeeding with work responsibilities. For example, Jessica discussed that she needed to pump in a shared office space which created anxiety for her. However, her company eventually designated break times and a private area for her to pump which helped reduce her anxiety.

Conversely, Rachel and Jenna encountered unsupportive, and at times hostile, work environments. Maggie initially expressed motivation to continue breastfeeding after returning to work; however, pressure due to too many breaks caused her to eventually discontinue due to the pressures from her work environment. Rachel recalled that even brief pumping breaks were “very frowned upon,” and the lack of privacy led to physical discomfort and emotional distress. This workplace hostility ultimately influenced her decision to leave her job. Jenna, a nurse, described a similarly difficult situation in which workplace culture

discouraged breastfeeding accommodations. “They never said ‘no,’ but I felt like they’d look at me differently,” she said, pointing out how subtle forms of judgment and social pressure can undermine a mother’s confidence, even in healthcare settings that should be more informed and supportive.

Even though each woman was able to sustain breastfeeding to a certain extent once returning to work, the workplace emerged as a powerful structural force that women had to navigate to continue to meet their breastfeeding goals. Women who had access to private spaces, flexible schedules, and supportive work cultures were better positioned to sustain breastfeeding. Others had to navigate unsupportive or ambiguous environments, requiring them to engage in persistent self-advocacy and emotional labor. These challenges resulted in either giving up or changing careers so they could be able to pump at work.

***Digital Supports Emerged as Primary Supports for Rural Women***

Each woman within this theme described how digital supports were meaningful influences on their breastfeeding outcomes. Since formal, in-person community infrastructure was sparse or nonexistent, women turned to alternative sources to fill community gaps and to create or locate networks to sustain breastfeeding. Each sought out alternative forms of care and information across digital platforms and online tools. For example, Devon, who had relocated from an urban area, with multiple resources to a rural area in which she found “…nothing locally here,” in which her only information was a hospital-issued packet provided when she was discharged from the hospital. When this packet no longer answered her questions, she turned to websites and forums describing these

resources as “helpful, but not the same as having someone there with you,” highlighting both the utility and limitations of virtual support.

They each depended on online resources for information, such as TikTok, and each discussed the importance of finding online breastfeeding communities. Melissa used Facebook and TikTok, to find both information and emotional support. As she said, “Those early weeks [of breastfeeding] are already overwhelming… And then you’re supposed to pack up and drive an hour for help?” indicating that this was not feasible to locate in person lactation support. Since the distance was impractical, she relied on online communities in which she found support: “Seeing other moms talk honestly [about challenges in breastfeeding] made me feel less alone.” Using these communities underscored the emotional reassurance she found in these virtual spaces. Similarly, Jessica described how digital educational tools helped guide her in the absence of local support groups. She completed a free online breastfeeding course through her hospital and supplemented that knowledge with Google searches and mobile apps. “I would’ve loved a local group,” she said, “but they [group access] were too far away.” The supplementing with an online course helped her answer her questions so that she was able to continue breastfeeding.

Maggie, a WIC participant, expressed frustration with WICs limited focus on breastfeeding support, and felt they pushed her towards formula feeding. She noted that meeting with WIC personnel only focused on her and failed to engage her partner in breastfeeding and what her partner could do to support her. Due to this frustration and seeking additional resources for both her and her partner, she

turned to Facebook groups, where she found open dialogue and nonjudgmental advice. She found the online Facebook group authentic in which she stated, “They were real people dealing with real stuff [about breastfeeding difficulties],” she said. This group gave her the support she needed to continue to breastfeed.

Melissa also described how online platforms became a key source of emotional and informational support. In which she said that to find these communities in person she would have to “travel to larger cities” she noted. In the absence of supports, she turned to TikTok and Facebook groups, where she could hear from other mothers and feel seen. “Seeing other moms talk honestly made me feel less alone,” she reflected. Jessica also found her primary support through online peer groups in which she stated, “There just wasn’t a breastfeeding culture around me,” she said. She also joined Facebook groups that offered both encouragement and troubleshooting help. Across these women, these virtual communities became their support networks, offering a sense of belonging that their physical environments did not provide.

Rachel faced heightened challenges due to a difficult medical recovery following a C-section. Rachel was discharged the day after her C-section with a hemoglobin level of 7.2, which is below the normal level for adult females (e.g., is 11.6 to 15.0 grams per deciliter (g/dL) (Mayo Clinic, 2025) and was discharged earlier than the typical recommendation after a c-section (Cleveland Clinic, 2024). She stated that there was no local professional follow-up for her health or to support her breastfeeding questions—like oversupply—on her own. As she stated, “I was dealing with my recovery and trying to figure everything out at the same

time." She felt overwhelmed, so through using Google, she located and subscribed to online breastfeeding forums. Kelly emphasized the emotional value of virtual peer communities, particularly during moments of doubt. "Seeing other moms…talk about their breastfeeding struggles, or how they overcame challenges, made me feel less alone," she said. Maggie also leaned on digital networks, finding that virtual spaces were often more inclusive than her local area. "It wasn't just about me—it was hard to find support that included my partner in the process too," she said. Online groups provided a more holistic sense of community, allowing both her and her partner to participate in the learning and emotional support process together.

The visual and candid nature of online social media content and support groups provided a space for the women to relate deeply to others, even in the absence of face-to-face connections. The women revealed the critical roles that (in the absence of a face-to-face community), finding an online community supported their breastfeeding outcomes. They described searching for online communities such as Facebook groups, as well as accessing online information through TikTok and other resources. and frequently through social media, such as TikTok and Facebook groups.

***Other Supports***

In addition to online supports, three women were also able to experience in person supports prior to moving to their rural communities. For example, Jenna had previously lived in Wichita, KS where she gave birth to her first child. Within this setting, she described that she experienced comprehensive lactation support. As she stated: "In Wichita, I had everything—lactation consultants, groups, community support," she said.

Jenna frequently referenced this prior support and network, experiences, and knowledge about breastfeeding she gained living in Wichita. Jenna described these prior supports and how she felt they provided her the guidance and support for breastfeeding:

> There was a free lactation clinic… they would do weighted feeds… spend time with you… multiple lactation consultants… they would come to you, get you situated, and help you latch… then do the weighted feed and determine if baby was receiving enough."

Having had these prior experiences helped support her current breastfeeding motivation. She also described that in Wichita, there was acceptance of breastfeeding as she noted by spaces for breastfeeding in public shopping areas and groups, she could join to discuss successes and challenges with breastfeeding. Overall, the women in the study that had previously received in person support through health care access and education while living outside of their rural communities highlighted how these supports helped them start and continue breastfeeding. Their discussions of these prior experiences underscored the need for more education, inclusive, accessible, and visible breastfeeding support embedded in their rural community life.

***State Policies***

While most mothers in this study described challenges at the community level, a few did experience tangible benefits from legislation or employer compliance that facilitated their ability to continue to breastfeed after returning to work. These positive cases, though limited, underscore the potential impact of well-implemented policies and demonstrate how meaningful support can emerge when legal protections are applied equitably and enforced effectively.

Melissa's experience illustrated the benefits of workplace compliance with the PUMP for Nursing Mothers Act. She described being able to pump or feed her baby during the workday as "a huge blessing," made easier by having the daycare in the same facility. Even when she needed to stay in her office, she felt supported at work to continue to breastfeed. Acknowledging her privilege, she noted, "I have my own office… so my access to pumping is going to be easier just because of the nature of my work." Her experience showed how proper policy implementation and supportive infrastructure can reduce stress and enhance breastfeeding success for working mothers.

Rachel's experience also demonstrated a form of policy-level empowerment—though self-initiated. After learning about her rights under the PUMP Act, she proactively communicated them to her employer. "I made sure to inform my employer," she explained, recognizing that without her advocacy, those protections might have been overlooked. While her experience highlights the broader issue of inconsistent enforcement, it also exemplifies how access to policy knowledge, paired with assertive communication, can lead to effective application in real-world settings.

Jessica and Maggie both extended the policy conversation into the realm of maternal mental health. While not referencing breastfeeding-specific legislation, they advocated for more comprehensive state-level postpartum support that includes emotional and psychological care. Jessica emphasized the importance of mental health screenings in the first year postpartum, noting, "There needs to be something structured—some kind of mental health check-in. I

was so irritable and anxious." Maggie echoed this sentiment, calling for longer-term follow-up care that reflects the extended challenges of early motherhood. Their perspectives offer insight into how state policies could evolve to more fully support breastfeeding by addressing the interconnectedness of physical and mental health in the postpartum period.

Emma also recognized the potential value of state breastfeeding policies, acknowledging that their existence was meaningful even if inconsistently applied. "State policies are there, but they don't always trickle down to rural areas," she said. Her awareness of the legal landscape—and her belief in its intent—suggests a latent support system that, while not fully realized in her own experience, offered a conceptual backing to her rights as a breastfeeding mother.

Together, these women discussed the partial and conditional success of breastfeeding-related policies when they had access to supportive employers, sufficient awareness, or the ability to advocate effectively. Rachel's and Emma's experiences suggest that policy awareness can serve as a tool for empowerment, while Jessica and Maggie highlight important policy gaps in maternal mental health that could be addressed to further enhance breastfeeding outcomes including paid maternity leave.

# Chapter 5: Discussion

This study explored breastfeeding behaviors and outcomes among rural Missouri mothers, focusing on how their socio-ecological systems shaped maternal self-efficacy. It is grounded in Bandura's (1997) theory of self-efficacy and the Social Ecological Model (McLeroy et al., 1988). Quantitative data revealed high initiation rates (>90%) across Missouri study counties, yet continuation rates dropped when interpersonal or organizational supports were absent. Qualitative interviews enriched this finding by illustrating the experiences of rural mothers navigating breastfeeding within complex social environments. The integration of quantitative and qualitative findings underscores the critical role of systemic support in sustaining breastfeeding and highlights the affordances and constraints for rural mothers.

## Breastfeeding Motivation

Infant health benefits were the predominant motivator for initiating breastfeeding. Survey data revealed that 50% of mothers cited their baby's health as the primary reason for breastfeeding, consistent with national data identifying infant health as the leading motivator (Centers for Disease Control and Prevention [CDC], 2022). During interviews, all twelve mothers echoed this reasoning, emphasizing the health and nutritional advantages for their infants.

However, only 10% of study respondents cited maternal health as a reason to breastfeed, and only five interview participants mentioned benefits to their own health as a factor in sustaining breastfeeding. Yet research shows this is an important dimension of motivation. For example, a European study suggests that

both infant well-being and maternal health should be considerations and motivations that influence breastfeeding decisions (López-Olmedo et al., 2023). Similarly, Meedya et al. (2010) demonstrated that maternal self-efficacy and recognition of health benefits contribute to breastfeeding continuation. Focusing solely on infant benefits may therefore overlook an opportunity to reinforce maternal motivation. In addition, survey results suggested that other motivators for breastfeeding were bonding and emotional connection (32%) and cost savings (23%). These findings suggest that infant health is a central driver for breastfeeding initiation while maternal health, emotional closeness, and economic considerations are secondary in shaping breastfeeding decisions.

This relative absence on breastfeeding benefits for the mother as a factor in choosing to initiate and/or sustain breastfeeding highlights a gap in both maternal awareness and public health messaging. Breastfeeding provides significant health benefits for mothers, including reduced risk of breast and ovarian cancers, type 2 diabetes, and hypertension, as well as support for postpartum weight regulation and hormonal recovery (CDC, 2022). That these outcomes were rarely mentioned suggests that state and national breastfeeding promotional efforts—which typically emphasize infant health—should expand to explicitly include maternal benefits. Doing so could validate women's own well-being as an important factor while providing an additional motivator for initiating and sustaining breastfeeding.

**Mastery and Vicarious Experiences**

Results of this study suggest that mastery experiences and vicarious experiences were critical to sustaining breastfeeding over time. Women who experienced success with breastfeeding relied on their own mastery experiences, while vicarious learning through family modeling and support contributed significantly to maternal confidence. These findings align with Bandura's (1997) assertion that self-efficacy is strengthened through prior success. Prior breastfeeding experience played a central role in shaping the participants maternal self-efficacy and breastfeeding outcomes.

Research demonstrates that women with previous breastfeeding experience score significantly higher on the Breastfeeding Self-Efficacy Scale (BSES) than first-time mothers, highlighting how mastery experiences build confidence for future behavior (Dennis, 2003). Similarly, women with prior breastfeeding experience are more likely to initiate breastfeeding again and sustain it longer than those without such experience (Otsuka et al., 2014). Maternal confidence has been identified as one of the strongest predictors of breastfeeding duration, with women who report higher levels of self-efficacy significantly more likely to sustain breastfeeding compared to those with lower confidence (Blyth et al., 2008; Otsuka et al., 2008). In addition, interventions explicitly designed to enhance self-efficacy—through skill development, role modeling, and supportive feedback—have also demonstrated improvements in breastfeeding initiation and continuation (McQueen et al., 2011; Nichols et al., 2007). Importantly, self-efficacy is not static; it evolves as mothers encounter challenges, refine their skills, and gain confidence in their abilities (Dennis, 1999).

Vicarious experiences also played a pivotal role in participants breastfeeding behaviors. Observing peers, family members, or community role models successfully breastfeed reinforces a mother's belief in her own ability, especially when mastery experiences are limited (Chezem et al., 2003). Results from this study suggest that regardless of initial outcomes, women drew upon early breastfeeding experiences to guide their decisions with subsequent children. For example, Kelly discontinued breastfeeding early with her first child but used that experience as motivation to persevere with her second child. Similarly, Jenna described developing resilience and employing specific strategies with subsequent children, demonstrating how even difficult early experiences served as learning opportunities that informed and strengthened later attempts.

Family and community role models further shaped maternal confidence. Emma, for instance, grew up surrounded by breastfeeding, as her mother nursed all five of her children. Reflecting on this, Emma explained: "My family is very open to breastfeeding, which makes me more comfortable with it. I have a friend whose mom didn't breastfeed her, and now when she breastfeeds her own children, her mom sometimes takes it as a criticism. I don't get that kind of negativity, which I really appreciate. My spouse is also very supportive, and that makes a big difference." Emma's reflections demonstrate how a supportive family environment normalizes breastfeeding and reduces stigma.

In contrast, Maggie shared that her mother had not breastfed, and that she (Maggie) was formula-fed, yet her mother's reflections still provided encouragement. Maggie recalled her mother often saying, "I wish they wouldn't have pushed formula so much in the nineties." This illustrates that even in the absence of direct modeling,

expressed regrets and encouragement can create supportive conditions for daughters to breastfeed.

Across cases, participants emphasized that both mastery experiences and vicarious learning opportunities shaped their breastfeeding journeys. Whether through successful personal experiences, learning from challenges, observing role models, or receiving encouragement, these influences reinforced maternal confidence and contributed to the sustainability of breastfeeding practices.

## Experiential and Informal Learning

Informal learning is defined as "learning from experience that takes place outside formally structured, institutionally sponsored, classroom-based activities" (Macià & García, 2016). John Dewey's theoretical framework offers valuable insight into the informal learning processes that shape maternal breastfeeding practices. Findings from this study demonstrated that experience—whether positive or negative—was a central driver of learning. Each breastfeeding experience, even when challenging, contributed to a mother's growing sense of competence and confidence. These experiences, often shared from mother to mother, represent the transmission of maternal knowledge, a form of experiential wisdom passed through generations.

Within the Social Ecological Model, informal learning operates across multiple layers. At the individual level, mothers learn through trial and error—developing practical skills, resilience, and self-efficacy through lived experience. At the interpersonal level, informal learning occurs through observation, conversation, and social modeling, as women draw on the experiences of peers, family members, and other mothers. At the community level, informal learning is reinforced in trusted local spaces such as churches,

WIC clinics, or MU Extension programs, where shared stories and peer support normalize breastfeeding as part of community culture. Dewey's concept of "learning by doing" underscores how these cumulative, experience-based interactions build not only individual capability but also collective understanding, linking personal experience to broader systems of community support (Dewey, 1938).

**Self-Advocacy**

Finally, results show that women who were motivated and drew on mastery and/or vicarious experiences were able to advocate for themselves with their partners, families, workplaces, and communities to initiate and sustain breastfeeding. These women were knowledgeable about the workplace accommodations to which they were entitled, engaged partners in household responsibilities, and identified community support groups either prior to or immediately following post-partum. These self-advocacy steps directly strengthened maternal self-efficacy by reducing uncertainty, creating clearer pathways for problem-solving, and reinforcing women's belief that they could overcome challenges.

This aligns with Bandura's (1997) framework, which emphasizes mastery experiences and social persuasion as critical sources of self-efficacy. By successfully negotiating for flexible work schedules, private pumping spaces, or household help, mothers experienced mastery in navigating systemic barriers, which in turn increased confidence in their ability to persist with breastfeeding. Likewise, when partners, family, or employers responded positively, this provided social validation that further bolstered efficacy beliefs. Research supports this connection: women who engage in proactive advocacy—whether by requesting workplace flexibility, enlisting partner involvement, or

seeking peer support—report higher breastfeeding self-efficacy and achieve longer durations of breastfeeding (Sriraman & Kellams, 2016; Ogbuanu et al., 2011). In this way, self-advocacy operates as both a practical tool for securing resources and a psychological mechanism for reinforcing confidence, enabling women to navigate structural barriers that might otherwise undermine breastfeeding success.

As shown by Rachel who described how workplace restrictions forced her to delay pumping until she became painfully engorged, often leaking through her scrubs. Yet she persisted in having workplace accommodations met. Her account demonstrates both the risks of unsupportive systems and the necessity of women's self-advocacy in protecting breastfeeding and maternal health. These findings demonstrate that while individual self-advocacy can strengthen breastfeeding self-efficacy, it should not be the primary mechanism by which mothers access support. Rather, advocacy should serve as a catalyst for systemic change—across workplaces, healthcare institutions, and communities—so that breastfeeding is not dependent on women's persistence in the face of structural inequities. Together, the findings revealed that both motivation and duration depend not only on individual determination but also on messaging, preparation, and structural support across their SES.

**Implications**

Ultimately, breastfeeding success among rural Missouri mothers reflects both resilience and inequity. Women persevered through engorgement pain, stigma, and workplace barriers—yet their success was too often contingent on personal persistence rather than institutional support. To honor their resilience, public health efforts must do two things: (1) broaden breastfeeding promotion to explicitly center maternal health

alongside infant outcomes, and (2) build systemic supports across workplaces, households, and communities that make breastfeeding sustainable without requiring mothers to constantly fight for accommodations. Therefore, study results suggest the following implications.

### *Maternal and Infant Health Messaging*

Breastfeeding promotion efforts frequently highlight infant health benefits, yet mothers in this study rarely mentioned their own health as a motivating factor. This reflects national data, where infant health consistently emerges as the leading motivator, while maternal health advantages remain underemphasized (CDC, 2022). However, women who breastfeed experience a reduced likelihood of developing several chronic and mental health conditions, including breast cancer, type 2 diabetes, ovarian cancer, heart disease, osteoporosis, and postpartum depression (Johns Hopkins Medicine, 2025).

When public health campaigns frame breastfeeding as beneficial to both infant and maternal health, mothers report greater motivation for both initiation and continuation (Nomura et al., 2017). Expanding messaging to validate maternal well-being as integral to breastfeeding outcomes not only empowers women but also challenges the narrative that breastfeeding is solely about infant health.

Campaigns such as the CDC's *Hear Her* emphasize the critical need for women to speak up about warning signs, underscoring how maternal self-advocacy remains a matter of survival (CDC, 2021). The campaign was developed in response to rising maternal mortality and morbidity rates in the

United States, where over 80% of pregnancy-related deaths have been identified as preventable (CDC, 2022). *Hear Her* encourages women to trust their instincts when something feels wrong during pregnancy or the postpartum period and urges healthcare providers, partners, and community members to listen without dismissal. This is crucial for maternal survival, as conditions such as preeclampsia, hemorrhage, infection, and blood clots can escalate rapidly if ignored. By validating women's voices and encouraging responsive systems of care, *Hear Her* directly addresses the systemic tendency to minimize maternal concerns—an issue with life-or-death consequences. In the context of breastfeeding and maternal health, the campaign demonstrates why maternal self-advocacy must be supported and normalized, not only to improve breastfeeding outcomes but also to safeguard the lives of mothers themselves.

### *Workplace Education and Lactation Rights*

Workplace policies and education are essential to ensure mothers understand their state and federal rights to lactation accommodations, such as protected break times and access to private pumping spaces. Evidence shows that unsupportive work environments are among the most significant barriers to breastfeeding continuation, with many mothers citing lack of accommodations as a reason for early cessation (Ogbuanu et al., 2011). Conversely, workplaces that provide designated lactation rooms, access to outlets, refrigeration, and supportive management are strongly associated with increased breastfeeding duration and maternal satisfaction (Sriraman & Kellams, 2016). Clear communication of rights through employee handbooks, onboarding, and human resources practices can

normalize lactation accommodation, ensuring mothers are not forced to choose between employment and breastfeeding.

### *Partner and Household Education*

Mothers in this study consistently emphasized the critical role of partner support, both practical and emotional, in sustaining breastfeeding. Current literature reinforces this finding: partner involvement, whether through sharing household duties, preparing bottles, or simply protecting time for breastfeeding, has been shown to significantly enhance maternal self-efficacy and breastfeeding duration (Rempel & Rempel, 2011). Emotional encouragement is equally important, as women with supportive partners report reduced stress, higher confidence, and a stronger sense of shared responsibility in infant care (Brown & Davies, 2014). The real strength of these findings lies in recognizing that partners often want to help but may lack the information or confidence to do so effectively. Moreover, the cultural landscape of breastfeeding support appears to have shifted—from reliance on the "grandmother" figure to the "partner" as the primary source of encouragement and assistance. When partners are provided with the knowledge and tools they need, it not only strengthens breastfeeding outcomes but also deepens the couple's relational bond and shared parenting experience (Tohotoa et al., 2009). Educational interventions that target partners—not just mothers—help normalize shared responsibility and build supportive environments that enable breastfeeding success.

### *Community-Based Support and Normalization*

Finally, community-based breastfeeding groups housed in trusted settings such as churches, community centers, or Extension programs can provide essential peer-to-peer support, particularly in rural contexts. Peer support interventions are consistently associated with improved breastfeeding initiation and duration, especially when delivered face-to-face and sustained over time (McFadden et al., 2017). Social modeling is also a powerful mechanism; observing other women breastfeeding reduces stigma and strengthens mothers' confidence through vicarious experiences (Dennis, 1999; Bandura, 1997). By embedding breastfeeding support into existing rural community infrastructures, such as the University of Missouri (MU) Extension programs or faith-based organizations, interventions can leverage trust and accessibility to normalize breastfeeding as a community priority. These settings also provide ideal opportunities to incorporate practical education**,** including safe handling and storage of expressed milk**,** realistic expectations for partners and family members on how to provide meaningful support, and integrated postpartum care and breastfeeding education. Together, these components not only build confidence and competence among mothers and their support networks but also help sustain breastfeeding as a shared, normalized community practice.

## Conclusion

Overall, breastfeeding success is not solely dependent on individual determination but is strongly shaped by messaging, preparation, and multi-level support. As a University of Missouri (MU) Extension employee, my aim with this dissertation study was to identify the needs of breastfeeding women within this

state and to present the implications from this study to MU Extension for future programing. MU Extension has a statewide presence which has the infrastructure to implement these implications and ensure accessibility to rural communities. MU Extension faculty are in every county in Missouri, bringing the university's resources directly to Missouri citizens. As part of a land-grant institution, the University of Missouri is committed not only to academic research but also to translating evidence-based knowledge into practical, community-driven programs.

Land-grant universities were established to ensure that higher education and applied research serve the broader public good, with a special emphasis on agriculture, mechanical arts, and community needs (National Research Council, 1995). Specialists, who typically hold at least a master's degree, are highly trained faculty who undergo ongoing professional development to deliver high-quality, research-based education to the public. This structure ensures that MU Extension is uniquely equipped to design and implement sustainable breastfeeding initiatives that address both individual and systemic barriers across rural Missouri. Institutions, such as MU Extension, are well positioned to lead this transformation, offering culturally relevant, community-based interventions that validate women's health, strengthen maternal self-efficacy, and reduce structural barriers. In doing so, breastfeeding can shift from a struggle borne by individuals to a collective priority embedded in rural health systems and community life.

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**Appendix A**

**Interview Protocol**

**1. Pre-Interview Preparation**

- Ensure participant has received:
  - Zoom link
  - Informed consent form
  - Overview of the study
- Test recording equipment and internet connection.
- Quiet, private setting for interviewer.
- Confirm secure storage for recordings and data.

## 2. Opening the Interview

**Script:**

"Hello [Participant's Name], thank you for joining me today. My name is [Your Name]. This interview is part of a research project on breastfeeding experiences among rural mothers in Missouri.

## 3. Confirm Informed Consent and Recording

**Script:**

"Before we begin, I want to make sure I have your permission to record this interview for transcription purposes?

*(Begin recording after verbal consent is given.)*

## 4. Ground Rules

**Script:**

There are no right or wrong answers — I'm here to learn from your experiences. You're welcome to skip any questions or stop the interview at any time. Everything you share will be kept confidential, and your identity will not be included in any published results.

## 5.Interview Questions

**Interview Questions for Mothers (Breastfeeding Questions)**

1.) How many children do you have? *Note the following interview will primarily be about the most recent child you have had.
2.) Did you breastfeed your child? If so, for how long?
3.) Did you introduce formula? If so, when?
    a. What were the reasons for introducing formula?
4.) Why did you choose to breastfeed?
5.) How did you get ready to breastfeed?
6.) Did anyone help you get ready to breastfeed?
7.) Do you have a goals with breastfeeding?
8.) What were your goals with breastfeeding?
9.) Where do you get breastfeeding information?
10.) Is breastfeeding acceptable in the rural area you live?
11.) How has your partner or family helped you with breastfeeding?
12.) Are there ways your family has made it hard to breastfeed?
13.) What does your partner think about breastfeeding?
14.) From your experience, what has been the hardest part about breastfeeding and what did you do, or how did you manage that?
15.) What has been your favorite aspect about breastfeeding?
16.) Has anything about breastfeeding surprised you?
17.) Do you think there are challenges or barriers to breast feeding in a rural area? And if so, what would you say they are?
18.) Do you feel comfortable breastfeeding in public?
19.) Are there private places available in public for pumping or breastfeeding if you need them?
20.) Do you think there are benefits to breastfeeding? And if so, what are they?
21.) Are there any specific health benefits to the child that you would one like say in detail?
22.) How does breastfeeding fit into your day?
23.) If you could use 3 words to describe what being a breastfeed mother in rural Missouri what it is like, what would they be?
24.) If you could use 3 words or short phrases to describe what being a mother in rural Missouri is like?
25.) Do you work outside the home?
26.) What's it like pumping at work?
27.) What are ways your employer makes it easy for you to pump at work?
28.) What are ways your employer makes it hard for you to pump at work?
29.) Do you have advice for other women who want to continue to breastfeed, but need to go back to work.
30.) Do you have any experience with online forums or parenting groups that you're a part of?
31.) How would describe your story with your experience of breastfeeding?
32.) How would say your past experiences differ from your current experience?
33.) Would you say that to be successful with breastfeeding that you have to have self-efficacy? The definition of self-efficacy is an individual's belief in their capacity to act

in the ways necessary to reach specific goals. Do you think you need to have that to be successful with breast feeding?

34.) What do you think mothers need in their rural community to be successful with breastfeeding?

35.) Is there anything you would like to share about your mental health as a mother in rural Missouri?

36.) Is there anything else that you would like to say on your experience with breastfeeding?

## 6. Closing the Interview

"Thank you so much for sharing your experience. Before we end is there anything you would like to add?"

## 7. After the Interview

- Stop the recording.
- Save and label the file securely
- Write brief field notes or memos.
- Store consent and demographic forms (if applicable).
- Follow up with thank-you message and any promised incentives.

## Appendix B

## Survey for Mothers

University of Missouri

**Default Question Block**

Consent to Participate in a Research Study
Project Title: Maternal Health Gaps in Rural Missouri
Principal Investigator/Researcher: Sara Bridgewater, PhD Student and Laura Zangori, Advisor
IRB Reference Number: 2097711

The project will interview and collect surveys of individuals who have recently given birth, individuals who support women who have recently given birth, and explore educational programs available to women who have recently given birth.

You are being invited to take part in a research project. You must be 18 years of age or older. Your participation is voluntary, and you may stop participating in this study at any time. To participate in this project, you will be asked to complete a survey. In addition to the survey, you may be selected for an interview. The time to complete the survey is 10 minutes; the time to complete the interview is 30 minutes. The interview will be recorded. The purpose of this research project is to discover maternal resource gaps among women who have recently given birth in rural Missouri. This project consists of surveys and interviews of individuals who have recently given birth, individuals who support women who have recently given birth, and explores educational programs available to women who have recently given birth. For participation in the survey, if you choose to offer your contact information your name will be placed in a drawing for a $50

gift card. If you are selected for an interview, you will receive a $50 gift card after the completion of the interview. Participants can submit photos. By sending photos to the research team, you are giving consent for those photo(s) to be used for visual purposes for this research study.

If you choose to participate in this research, the audio recorded interviews will not be shared with anyone outside of the research team. Information gathered in this study will be stored in an electronic file and identified by a code number only. The code key connecting your name to specific information about you will be kept in a separate, secure location. Information contained in your records may not be given to anyone unaffiliated with the study in a form that could identify you without your written consent, except as required by law. When using your interviews as data and reporting the findings of this study, your name will be replaced with a pseudonym.

If you have questions about this study, you can contact the University of Missouri researcher at sbridgewater@missouri.edu or 660.679.4167. If you have questions about your rights as a research participant, please contact the University of Missouri Institutional Review Board (IRB) at 573-882-3181 or muresearchirb@missouri.edu. The IRB is a group of people who review research studies to make sure the rights and welfare of participants are protected. If you want to talk privately about any concerns or issues related to your participation, you may contact the Research Participant Advocacy at 888-280-5002 (a free call) or email muresearchrpa@missouri.edu. You can ask the researcher to provide you with a copy of this consent for your records, or you can save a copy of this consent if it has already been provided to you. We appreciate your consideration to participate in this study.

Do you consent to these terms?

○ Yes

- ○ No

What Missouri county do you reside in?

- ○ Adair
- ○ Andrew
- ○ Atchison
- ○ Audrain
- ○ Barry
- ○ Barton
- ○ Bates
- ○ Benton
- ○ Bollinger
- ○ Boone
- ○ Buchanan
- ○ Butler
- ○ Caldwell
- ○ Callaway
- ○ Camden
- ○ Cape Girardeau
- ○ Carroll
- ○ Carter
- ○ Cass
- ○ Cedar
- ○ Chariton
- ○ Christian
- ○ Clark
- ○ Clay
- ○ Clinton
- ○ Cole
- ○ Cooper
- ○ Crawford
- ○ Dade
- ○ Dallas
- ○ Daviess
- ○ DeKalb
- ○ Dent
- ○ Douglas

- ○ Dunklin
- ○ Franklin
- ○ Gasconade
- ○ Gentry
- ○ Greene
- ○ Grundy
- ○ Harrison
- ○ Henry
- ○ Hickory
- ○ Holt
- ○ Howard
- ○ Howell
- ○ Iron
- ○ Jackson
- ○ Jasper
- ○ Jefferson
- ○ Johnson
- ○ Knox
- ○ Laclede
- ○ Lafayette
- ○ Lawrence
- ○ Lewis
- ○ Lincoln
- ○ Linn
- ○ Livingston
- ○ Macon
- ○ Madison
- ○ Maries
- ○ Marion
- ○ McDonald
- ○ Mercer
- ○ Miller
- ○ Mississippi
- ○ Moniteau
- ○ Monroe
- ○ Montgomery
- ○ Morgan
- ○ New Madrid
- ○ Newton
- ○ Nodaway

- ○ Oregon
- ○ Osage
- ○ Ozark
- ○ Pemiscot
- ○ Perry
- ○ Pettis
- ○ Phelps
- ○ Pike
- ○ Platte
- ○ Polk
- ○ Pulaski
- ○ Putnam
- ○ Rolls
- ○ Randolph
- ○ Ray
- ○ Reynolds
- ○ Ripley
- ○ Saline
- ○ Schuyler
- ○ Scotland
- ○ Scott
- ○ Shannon
- ○ Shelby
- ○ St. Charles
- ○ St. Clair
- ○ St. Francois
- ○ St. Louis
- ○ St. Louis city
- ○ Ste. Genevieve
- ○ Stoddard
- ○ Stone
- ○ Sullivan
- ○ Taney
- ○ Texas
- ○ Vernon
- ○ Warren
- ○ Washington
- ○ Wayne
- ○ Webster
- ○ Worth

- ○ Wright

What zip code do you currently live in?

Level of education do you have?

- ○ Below high school level
- ○ GED
- ○ High School Diploma
- ○ Associate's
- ○ Bachelor's
- ○ Master's or higher education

How old are you?

- ○ 18 to 20 years old
- ○ 21 to 25 years old
- ○ 26 to 30 years old
- ○ 31 to 35 years old
- ○ 36 to 40 years old
- ○ 41 to 45 years old
- ○ 46 or older

What is your household income?

- ○ Less than $10,000
- ○ $10,000-$14,999
- ○ $15,000-$24,999
- ○ $25,000-$49,999

- ○ $50,000-$99,999
- ○ $100,000+

Would you say you live in a rural area?

- ○ Yes
- ○ No

Which of the following best describes you?

- ○ Asian or Pacific Islander
- ○ Black or African American
- ○ Hispanic or Latino
- ○ Native American or Alaska Native
- ○ White or Caucasian
- ○ Multiracial or Biracial
- ○ [ ] Other (please fill in):_____

How would you describe your relationship status?

- ○ Single
- ○ Married
- ○ Single with a Partner

How many live births have you had?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

- ○ 6
- ○ 7+

Have you ever breastfed?

- ○ Yes, but not currently.
- ○ Yes and currently breastfeeding.
- ○ No

Did you breastfeed Child 1?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 1?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months -12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 1?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 1 only at the breast

If you breastfed Child 1, how long did you exclusively breastfeed at the breast?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 1, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 1, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 2?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 2?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 2?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 2 only at the breast

If you breastfed Child 2, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 2, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 2, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 3?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 3?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 3?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 3 only at the breast

If you breastfed Child 3, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 3, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 3, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 4?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 4?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 4?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 4 only at the breast

If you breastfed Child 4, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 4, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 4, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 5?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 5?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 5?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 5 only at the breast

If you breastfed Child 5, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 5, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 5, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 6?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 6?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 6?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 6 only at the breast

If you breastfed Child 6, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 6, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 6, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 7?

- ○ No
- ○ Yes

If yes, how long did you breastfeed Child 7?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 7?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 7 only at the breast

If you breastfed Child 7, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 7, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 7, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

Did you breastfeed Child 8?

- ○ No
- ○ Yes
- ○ Not applicable. I have 7 children.

If yes, how long did you breastfeed Child 8?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

What describes your experience the best for breastfeeding Child 8?

- ○ I pumped AND breastfed at the breast
- ○ I pumped exclusively
- ○ I fed child 8 only at the breast

If you breastfed Child 8, how long did you exclusively breastfeed at the breast?

- ○ Breastfed but did not ever do it exclusively from the breast.
- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped in addition to breastfeeding at the breast for Child 8, how long did you pump for?

- ○ Less than 6 weeks
- ○ 6 weeks-3months
- ○ 3 months-6months

- ○ 6 months-12 months
- ○ 12 months or longer

If you pumped exclusively for Child 8, for how long?

- ○ Less than 6 weeks
- ○ 6 weeks - 3 months
- ○ 3 months - 6 months
- ○ 6 months - 12 months
- ○ 12 months or longer

19.) What child(ren) were born in Missouri? (Mark all that apply)

- ☐ Child 1
- ☐ Child 2
- ☐ Child 3
- ☐ Child 4
- ☐ Child 5
- ☐ Child 6
- ☐ Child 7
- ☐ Child 8
- ☐ Child 9
- ☐ Child 10

Are there labor/delivery services in your county?

- ○ Yes
- ○ No

Did you drive outside your county to deliver your most recent

baby?

- ○ Yes
- ○ No

How did you give birth to your most recent baby?

- ○ Vaginal
- ○ Caesarean
- ○ VBAC

When did you introduce formula to your most recent baby?

- ○ Less than 6 weeks
- ○ 6 weeks to 3 months
- ○ 3 months to 6 months
- ○ 6 months or more
- ○ Never

For your most recent birth, please mark all that apply.

- ☐ Induction
- ☐ Preterm birth
- ☐ NICU stay
- ☐ None of the above

Are you currently on Medicaid Insurance?

- ○ Yes
- ○ No

Do you receive WIC services?

- ○ Yes
- ○ No

If you breastfed, why did you decide to?

Who helped or supported you while breastfeeding?

- ☐ Partner
- ☐ Spouse
- ☐ Friends
- ☐ Grandparents of the baby
- ☐ Great grandparents of the baby
- ☐ Parents
- ☐ Nurses
- ☐ Healthcare Provider
- ☐ Employer
- ☐ No one
- ☐ Other: _____

Who made it hard for you to breastfeed?

- ☐ Partner
- ☐ Spouse
- ☐ Friends
- ☐ Grandparents of the baby
- ☐ Great grandparents of the baby
- ☐ Parents
- ☐ Nurses

- ☐ Healthcare Provider
- ☐ Employer
- ☐ No one
- ☐ [ ] Other: _____

What topics in an educational program would be the most beneficial for new mothers and parents in rural Missouri? (check all that apply)

- ☐ Breastfeeding
- ☐ Baby safe sleep
- ☐ Postpartum care
- ☐ Exercising safely during and after pregnancy
- ☐ Taking Care of Baby 101
- ☐ Prepping, Storing, and Safely Handling Breastmilk
- ☐ Prenatal care
- ☐ Baby Led Weaning
- ☐ Mental Health Support/Referral
- ☐ [ ] Other: _____

Was your most recent birth experience traumatic?

- ○ Yes
- ○ No

Did anyone on your healthcare team screen you for perinatal mood and anxiety disorders like postpartum depression?

- ○ Yes
- ○ No
- ○ I am unsure if I received a screening for perinatal mood and anxiety disorders like postpartum depression.

I received a screening for perinatal mood and anxiety disorder from? (Mark all that apply.)

- ☐ OB office
- ☐ Hospital
- ☐ Pediatrician office
- ☐ Lactation Consultant
- ☐ Other: _____

Are you receiving mental healthcare services?

- ○ Yes
- ○ No

Were you referred to a mental health provider?

- ○ Yes
- ○ No

Is there a mental health provider in the county you reside in?

- ○ Yes
- ○ No
- ○ Unknown

If you have been referred to a mental health provider, did you seek those services in the county you reside in?

- ○ Yes
- ○ No, there are no mental health services in the county I reside in.
- ○ No, but there are services available in the county I reside in.
- ○ No, and I am unsure if there are services available in the county I reside in.
- ○ I received a referral but decided not to seek any services.

How often do you/did you breastfeed your infant on a typical day?

- ○ 1-2 times
- ○ 3-4 times
- ○ 5-6 times
- ○ 6-7 times
- ○ 8-9 times
- ○ 10-11 times
- ○ 12 + times

What is/was the usual duration of time you breastfeed your baby?

- ○ 0-15 minutes
- ○ 15-30minutes
- ○ 30 or more minutes

If you pump, how often did you/do you pump on a typical day?

- ○ 1-2 times
- ○ 3-4 times
- ○ 5-6 times
- ○ 6-7 times
- ○ 8-9 times
- ○ 10-11 times
- ○ 12 + times

- ○ I do not pump.

How many days during the week do you/did you usually pump?

- ○ I day
- ○ 2 days
- ○ 3 days
- ○ 4 days
- ○ 5 days
- ○ 6 days
- ○ 7 days
- ○ I do not pump.

And how long does/did a single pumping session usually take you?

- ○ 0-15 minutes
- ○ 15-30minutes
- ○ 30 or more minutes
- ○ I do not pump.

What describes your current employment status?

- ☐ Self-employed
- ☐ Paid by an employer
- ☐ Unemployed
- ☐ Salary Paid
- ☐ Hourly Paid
- ☐ Part time employment
- ☐ Full time employment
- ☐ I have more than one job.

If working paid by an employer, self-employed, etc. how old was your most recent child when you returned to work?

- ○ Less than 6 weeks
- ○ 6 weeks-3 months
- ○ 3 months-6 months
- ○ 6 months-12 months
- ○ 12 months or older
- ○ I did not return to work after the birth of my child.
- ○ I wasn't employed before my baby was born.

Using 3 words/short phrases what being a mother is like in Missouri?

Word #1 _____

Word #2 _____

Word #3 _____

Using 3 words/short phrases what would describe your ideal future/dreams of motherhood in Missouri?

Word #1 _____

Word #2 _____

Word #3

If breastfeeding, using 3 words/short phrases what being a breastfeeding mother is like in Missouri?

Word #1

Word #2

Word #3

Any special circumstances or other comments you would like to share, feel free to leave them here.

For completing the survey you are eligible for a couple of things. Please mark all that apply:

- ☐ Yes, I would like to be in the gift card drawing.
- ☐ Yes, I would like to be in gift card drawing and interested in doing a 30 minute interview. A $50 gift card will be given to participants who complete an interview.
- ☐ No

If yes, please provide:

Name

Email

Phone Number

Address

## Appendix C

### Screening for Perinatal Mood and Anxiety Disorders

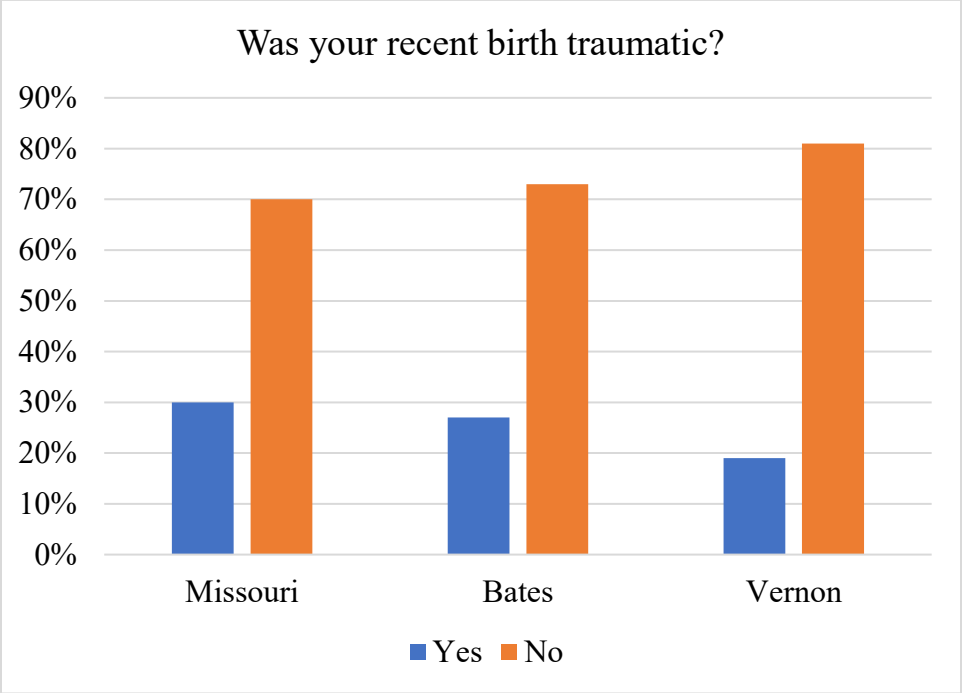
The data revealed significant differences in the screening for perinatal mood and anxiety disorders, such as postpartum depression, across various regions of Missouri. Statewide, 60% of mothers reported being screened for these conditions, 30% were not, and 10% were unsure if they had been screened. Bates County had a higher screening rate, with 77% of mothers confirming they were screened, while 23% were not. In contrast, Vernon County had a concerning trend, with only 24% of mothers being screened, 57% not screened, and 19% unsure. These findings highlight a gap in screening practices, particularly in rural areas like Vernon County. The results emphasize the need for educational programs to raise awareness about the importance of screenings for perinatal mood and anxiety disorders. Providing education on these screenings could help empower mothers to advocate for themselves and encourage healthcare providers to adopt consistent, widespread screening practices for postpartum depression and other related conditions.

### Birth Trauma and Its Impact on Breastfeeding

The data also revealed notable regional differences in the experience of birth trauma, which could impact breastfeeding outcomes. Statewide, 30% of mothers reported a traumatic birth experience, while 70% did not. In Bates County, 27% of mothers reported birth trauma, with 73% not. Vernon County had the lowest rate of birth trauma, with only 19% reporting traumatic births and 81% not. These statistics suggest that the experience of birth trauma may play a role in influencing breastfeeding success. Educating mothers about the potential effects of traumatic birth experiences on

breastfeeding, along with offering targeted support and resources, could help improve breastfeeding outcomes, particularly in regions with higher rates of birth trauma.

**Figure 16**




**Household Income**

Participant-reported household income levels varied by geographic area. Among all Missouri-based participants, 2% reported annual incomes of less than $10,000, another 2% between $10,000 and $14,999, 4% between $15,000 and $24,999, 22% between $25,000 and $49,999, 49% between $50,000 and $99,999, and 21% reported incomes of $100,000 or more. In Bates County, 5% of participants reported incomes below $10,000, 9% between $10,000 and $14,999, none in the $15,000 to $24,999 range, 27% between $25,000 and $49,999, 41% between $50,000 and $99,999, and 18% at $100,000 or more. Vernon County participants reported higher overall income levels, with 24% earning between

$25,000 and $49,999, 43% between $50,000 and $99,999, and 33% reporting incomes of $100,000 or more. Notably, no Vernon County participants selected income categories below $25,000.

**Figure 17**

*Missouri WIC Income Guidelines (Missouri Department of Health & Senior Services, 2024)*

Based on 185% of the poverty level
Effective May 1, 2024
Guidelines reflect gross (pre-tax) income

| Family Size | Annual | Monthly | Twice-Monthly | Bi-Weekly | Weekly |
|---|---|---|---|---|---|
| 1 | $27,861 | $2,322 | $1,161 | $1,072 | $536 |
| 2 | $37,814 | $3,152 | $1,576 | $1,455 | $728 |
| 3 | $47,767 | $3,981 | $1,991 | $1,838 | $919 |
| 4 | $57,720 | $4,810 | $2,405 | $2,220 | $1,110 |
| 5 | $67,673 | $5,640 | $2,820 | $2,603 | $1,302 |
| 6 | $77,626 | $6,469 | $3,235 | $2,986 | $1,493 |
| 7 | $87,579 | $7,299 | $3,650 | $3,369 | $1,685 |
| 8 | $97,532 | $8,128 | $4,064 | $3,752 | $1,876 |
| 9 | $107,485 | $8,958 | $4,479 | $4,135 | $2,068 |
| 10 | $117,438 | $9,787 | $4,894 | $4,517 | $2,259 |
| 11 | $127,391 | $10,616 | $5,308 | $4,900 | $2,450 |
| 12 | $137,344 | $11,446 | $5,723 | $5,283 | $2,642 |
| 13 | $147,297 | $12,275 | $6,138 | $5,666 | $2,833 |
| 14 | $157,250 | $13,105 | $6,553 | $6,049 | $3,025 |
| 15 | $167,203 | $13,934 | $6,967 | $6,431 | $3,216 |
| 16 | $177,156 | $14,763 | $7,382 | $6,814 | $3,407 |
| Each additional family member | Plus $9,953 | Plus $830 | Plus $415 | Plus $383 | Plus $192 |

## Vita

Sara Bridgewater was born on January 10, 1994, to Jeff and Melody Wikoff in Fort Scott, Kansas. Raised in a small town in Bates County just down the road from the school during her elementary years, and later on a farm in rural Vernon County, Missouri, she grew up surrounded by strong family values, a close-knit community, and meaningful involvement in school and extracurricular activities—including 4-H. Although she didn't realize it at the time, those early experiences planted the seeds for a lifelong connection with University of Missouri Extension.

Sara attended Hume R-8 School from kindergarten through her senior year and went on to Missouri State University, initially undecided in her major. After exploring her interests, she shifted to Health Services, where she discovered her passion for public health. Accepted into an accelerated Master of Public Health (MPH) program, she worked on her undergraduate and graduate coursework simultaneously, earning her bachelor's degree first, followed by her master's degree a year later. During her graduate studies, she held a unique assistantship with the Taney County Health Department, collaborating with public health stakeholders—including MU Extension Specialists—an experience that reawakened the 4-H and community-driven values of her youth. One Agriculture MU Extension Specialist asked Sara about her background and future plans. After listening, he smiled and said, *"You sound like an Extension person to me."*

After earning her MPH in 2017, Sara worked as a Quality Improvement Specialist with the Clay County Health Department. During that time, she

frequently traveled between Kansas City and the family farm, where she was building a life with her fiancé, Harley. In 2018, as they prepared to purchase their first home and lay down roots, a position opened with MU Extension for a Nutrition and Health Field Specialist in her home region. A local realtor, who was also on the Extension council, mentioned the opportunity—a fateful conversation that led Sara to apply. She accepted the position, marking a *full-circle moment*: the girl who once benefited from Extension as a 4-H member was now returning home to serve her community through Extension.

Sara and Harley married in September 2018, and in March 2020—at the onset of the COVID-19 pandemic—they welcomed their first son, Teddy. Long inspired by learning and growth, Sara had an early interest in pursuing a PhD, though logistical challenges initially made it feel out of reach. But the pandemic shifted possibilities: virtual learning created access where there was none, and Sara found champions like Dr. Laura Zangori, who saw the potential in a small-town mom with big dreams.

Sara began her PhD journey in the summer of 2021 while continuing to serve full-time as a Nutrition and Health Specialist. In March 2022, she and Harley welcomed their second child, Franklin. Amid balancing work, family, and doctoral studies, Sara also navigated the rigorous non-tenure track promotion process within MU Extension.

The year 2024 brought both challenge and triumph. Sara completed her coursework, passed comprehensive exams, was assigned a new county, gave birth

to her third child, Lucy, and was promoted to Associate Extension Professional, effective September 2025.

Today, Sara continues to serve the communities she calls home, bringing maternal health research and outreach into rural Missouri—an area long overlooked in traditional Extension work. Her journey—from a young girl in 4-H to an advanced public health professional helping shape maternal well-being in underserved regions—truly represents a *full-circle moment* with MU Extension, and a commitment to ensuring every family in rural Missouri has access to support, education, and care.