Breastfeeding Experiences and Barriers among Mothers with Perceived Insufficient Milk Supply

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BACKGROUND. Mothers with perceived insufficient milk supply (PIMS) are more likely to wean breastfeeding early and face many barriers throughout their breastfeeding journey compared to woman with adequate milk supply. Understanding how PIMS influences mothers' breastfeeding duration will help health care practitioners better support and guide mothers to breastfeed longer.

OBJECTIVES. This study aimed to better understand the experiences and barriers faced by mothers with PIMS living in Southwestern, Pennsylvania.

METHODS. Participants included 26 women (>=18 years old, English-speaking, living in Southwest Pennsylvania), with healthy term singleton infants between one month and 24 months of age, who have breastfed, and had PIMS while breastfeeding. During fall 2019, participants took part in four, 60-90 min focus groups moderated by the primary investigator and attended by an assistant moderator. Sessions were audio-recorded and transcribed verbatim. Mothers completed a survey reporting their demographic and breastfeeding/pregnancy history. Transcripts and assistant moderator notes were coded and analyzed using the constant comparison method to identify overarching themes and patterns in the data. The quantitative data analysis was primarily descriptive, assessing percentages or means and standard deviations for participant demographics and pregnancy/breastfeeding history.

RESULTS/CONCLUSIONS. All mothers were between the ages 18-44 years old, with 54% of the mothers between the ages of 25-34 years old. Focus group discussions revealed four

overarching themes related to PIMS barriers and supports rooted in the Social Ecological Model (SEM) on the individual, interpersonal, organizational, and societal/community levels. Findings from this study highlighted specific education and support needs of mothers with PIMS in Southwestern, Pennsylvania. Results could be used to improve training of future dietitians, practice of current health professionals, and breastfeeding outcomes for local moms. Specific implications for practice include the need to increase PIMS screenings for mothers with referrals to local resources and support groups, providers should adopt a client-centered approach tailored to each mothers' goals and experiences, and include lactation in Registered Dietitian Nutritionist training to expand their scope of practice.

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Preface

I would like to acknowledge and thank Dr. Sharon Ross, my dissertation chair, for her feedback, insight and mentoring during the past three years. Without your guidance and support, I would have never made it to this point. This has been a huge step in my life, giving up many things over the past three years to become Dr. Cousins. I would also like to thank Dr. Jill Demirci and Dr. Bethany Gibbs for serving on my dissertation committee and providing guidance during my dissertation of practice journey.

My 2017 HPA EdD Cohort, we did it and will never forget the memories we made and glad to have gained all your friendships for life.

My family who have sacrificed a lot over the past years to allow me to further my education. I am lucky to have such a supportive, loving husband – you have been my rock during this EdD!

1.0 Problem Area

Breastmilk can help infants receive essential nutrients, lead to healthy brain development, improve cognitive performance, and is associated with better educational achievement (Lessen & Kavanagh, 2015). For the purposes of this study, the term “breastfeeding” will be inclusive of any mother who is providing human milk to their infant, regardless if the source is from the breast or bottle. Human milk is considered the optimal form of infant nutrition for nearly all infants (James, Lessen & American Dietetic Association, 2009). The Academy of Nutrition and Dietetics and the American Academy of Pediatrics recommend breastfeeding continue for at least 12 months, and thereafter for as long as mother and baby desire (Eidelman & Schanler, 2012). The World Health Organization (WHO) recommends continued breastfeeding up to two years of age or beyond (Lessen & Kavanagh, 2015). Infant benefits and advantages from breastfeeding are well-researched and recent research advancements include heightened understanding of the role of breast milk in gut microbiome development, protective effect of human milk for premature infants (Donovan et al., 2012).

According to the Centers for Disease Control and Prevention (CDC) Breastfeeding Report Card, among infants born in 2015 in the United States (U.S.), four out of five (83.2%) started to breastfeed, over half (57.6%) were breastfeeding at six months, and only 35.9% were breastfeeding at 12 months (CDC, 2015). Healthy People 2010 objectives for breastfeeding indicated that currently only 14.1% of U.S. infants were exclusively breastfed (i.e., breastmilk was the only source of nutrition) at six months and 24% of maternity services provided supplements of commercial infant formula in the first 48 hours after birth. The Healthy People 2020 goal for breastfeeding initiation and duration is 25.5%, supporting the need for not only increased

breastfeeding initiation, but perhaps more importantly, increased breastfeeding exclusivity and duration (Healthy People 2020: Breastfeeding Objectives, 2019). The WHO/UNICEF Ten Steps to Successful Breastfeeding can help provide guidance to facilities to support breastfeeding initiation and duration (CDC, 2015).

1.1 Problem of Practice

Nationally, U.S. mothers have low rates of breastfeeding duration and exclusivity, which may be linked with with perceived insufficient milk supply (PIMS). Mothers with PIMS may engage in a variety of practices to boost milk supply before early, unintended weaning including dietary supplements, pharmaceutical or herbal galactagogues, homeopathic preparations, phytotherapeutic agents, traditional practices, and acupuncture (Bettiol et al., 2018; Brodribb, W., 2018). Perceived insufficient milk supply is a frequently cited reason for early weaning of breastfeeding in many populations across the world (WHO, 2000). However, it is believed that only 5% of women are physiologically incapable of producing adequate amounts of milk (Kent et al., 2012). Despite this low number, approximately 50% of U.S. mothers report perceptions of insufficient milk production, leading to supplementation with human milk substitutes (e.g., formula) or to weaning completely (Nobili, Schwimmer, & Vajro, 2019).

A better understanding of the experiences and barriers breastfeeding mothers face with PIMS would provide important information about how best to support mothers and infants to maintain breastfeeding. It is essential, in order for infants and mothers to reap the benefits of breastfeeding, that these mothers have the support they need to meet their breastfeeding goals. The current inquiry is relevant for multiple stakeholder groups to be able to better support breastfeeding

mothers to prevent or overcome PIMS. For example, educating health professionals on how to interact with new parents about breastfeeding could improve overall breastfeeding outcomes. Further, the inquiry will identify education and support needs of mothers in Southwestern, Pennsylvania.

2.0 Review of Supporting Scholarship and Professional Knowledge

2.1 Topic Statement

2.1.1 Benefits of Breastfeeding

Human milk is considered the optimal form of infant nutrition for nearly all infants (James, Lessen & American Dietetic Association, 2009). The Academy of Nutrition and Dietetics and the American Academy of Pediatrics recommend breastfeeding continue for at least 12 months, and thereafter for as long as mother and baby desire (Eidelman & Schanler, 2012). The WHO recommends continued breastfeeding up to two years of age or beyond (Lessen & Kavanagh, 2015). The risks of not receiving human milk include increased morbidity and mortality of infants and increased medical costs and economic burdens for health care organizations and families (Lessen & Kavanagh, 2015). Strong evidence exists for the benefits to both mothers and infants, yet there are still many mothers who do not or are unable to provide breastmilk to their infants.

Infant benefits and advantages from breastfeeding are well-researched and documented for both short and long-term neurological and medical benefits. High-income countries have shorter breastfeeding duration than do low-income and middle-income countries. Though, even in low-income and middle-income countries, only 37% of infants younger than 6 months are exclusively breastfed (Victora et al., 2016). If infants are exclusively breastfed for greater than four months, their risk of hospitalization for lower respiratory infection in the first year is reduced by 72% (Ip, 2007). Secondly, infants exclusively breastfed for greater than 6 months were four times less likely to develop pneumonia than infants who breastfed less than four months. Exclusive breastfeeding

for greater than three months reduces the risk of otitis media by 50%. Babies who received any breastmilk compared to formula fed babies decreased their risk of otitis media by 25%. Gastrointestinal infections were reduced with breastfeeding by 64% and persist up to two months after breastfeeding was completed (Ip, 2007; Duijts et al., 2010). Incidence of necrotizing enterocolitis (NEC) reduced by 58% when preterm infants received human milk (Ip, 2007). Breastfeeding is associated with a reduction of risk in chronic diseases later in life including celiac disease (52%) (Akobeng et al., 2006), inflammatory bowel disease (31%) (Barclay et al., 2009), obesity (15-30%) (Owen et al., 2005), type 1 diabetes mellitus (up to 30%) (Ip, 2007), and childhood leukemia and lymphoma (15-20%) (Kwan et al., 2005). Benefits are significant when preterm infants are fed human milk. As mentioned above, there is a notable decrease of NEC, infections, and decreased number of readmissions related to illness. Longitudinal studies have shown significant improvement in neurodevelopmental outcomes when infants were fed human milk (Eidelman & Schanler, 2012). Breastfeeding benefits mothers as well; there is evidence that it can prevent breast cancer, improve birth spacing, and might reduce a woman's risk of diabetes and ovarian cancer. Further, evidence suggests that women who do not breastfeed have a higher risk of cancer and cardiovascular diseases (Steube & Schwarz, 2010; Victora et al., 2016).

2.1.2 Breastfeeding Initiation and Duration

According to the CDC Breastfeeding Report Card, among infants born in 2015 in the United States (U.S.), four out of five (83.2%) started to breastfeed, over half (57.6%) were breastfeeding at six months, and only 35.9% were breastfeeding at 12 months (CDC, 2015). Despite rates of breastfeeding initiation on the rise, breastfeeding duration has not seen a substantial increase (Kent et al., 2006). Healthy People 2010 objectives for breastfeeding indicated

that currently only 14.1% of U.S. infants were exclusively breastfed (i.e., breastmilk was the only source of nutrition) at six months. The Healthy People 2020 target percentage goal is 25.5%, supporting the need for not only increased breastfeeding initiation, but more importantly, increased breastfeeding exclusivity and duration (Healthy People 2020: Breastfeeding Objectives, 2019).

The WHO/UNICEF Ten Steps to Successful Breastfeeding was published in 1991 and recently revised in 2018 and provides a guide for hospital policies to support breastfeeding. The American Academy of Pediatrics also endorsed the steps as optimal maternity care (CDC, 2015). If hospitals implement and practice these steps, they will successfully support breastfeeding initiation, exclusivity, and duration. The Baby-friendly Hospital Initiative can help motivate facilities providing maternity and newborn services worldwide, and WHO has recommended all facilities should implement the Ten Steps (CDC, 2015). The Ten Steps to Successful Breastfeeding are the following:

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

9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

The implementation of the steps remains low despite the evidence and the endorsement from the American Academy of Pediatrics (Winter, 2016). Specifically, the Centers for Disease Control (CDC) Maternity Care Practices 2015 Survey found the lowest prevalence rates for the following steps: Six (Limit Supplements), One (Model Policy), Ten (Discharge support), Nine (Limit Pacifiers), and Seven (Room-in) (CDC, 2015)

According to the previous data, as a standard of practice for Healthy People 2010 data showed that 24% of maternity services provided supplements of commercial infant formula in the first 48 hours after birth. Mothers with milk supply concerns may not always refer to health care providers and instead turn to supplementation with infant formula or milk boosting supplements, which may ultimately decrease infant breastfeeding demand (Eidelman & Schanler, 2012). Variations within hospital practices, counseling, and one-on-one interactions may contribute to inadequate milk supply and thus early discontinuation of breastfeeding (Eidelman & Schanler, 2012).

The first week of lactation is important for establishing an adequate milk supply. Colostrum is a thick, yellow fluid produced during lactogenesis II (day 1-3 after infant birth). Colostrum provides 580-700kcal/L and is higher in protein and lower in carbohydrates and fat compared to mature milk (Brown, 2020). It is recommended that infants are breastfed within 60 minutes of birth and this will likely consist of 0 to 5ml of colostrum (Kent et al., 2006). The intake of colostrum increases thereafter to 37 to 169mL/d for the first two days after birth. By one-month post-partum,

milk production should be fully established and normal maternal milk production for infants 1-6 months old average 25oz (750 mL) per day. Different babies can take in different amounts and a typical range of milk intake is 570-900 mL per day (in 19-30 oz per day), up to 750 to 800mL/day if mothers are exclusively breastfeeding (Kent et al., 2006; Kent et al., 1999).

2.2 Measurement of Infant Breastmilk Intake

Infant breast milk intake is largely measured by healthcare professionals through maternal quantity and frequency of infant feedings, number of wet diapers, and infant weight gain. There are concerns that this approach may misclassify breast milk intake by over or underreporting and provide inconsistencies in estimated intake. Challenges exist with estimating breast milk intake with maternal intake because actual intake from the breast is unknown unless exclusively pumping or with test weight procedure. Actual intake and composition of the milk from the breast can be variable depending on the time of day, day of the week, environmental exposures, breastfeeding practices and the mother (Kent et al., 2006). Farrow and Blissett (2006) noted other factors including infant age, sex, weight, use of bottles, pacifiers, caregiver responsiveness and feeding style, and length of breastfeeding exclusivity and duration may also influence intake.

Several landmark studies have investigated whether infant breastmilk consumption could be accurately estimated with test weighting for one or two consecutive feeds in a 24-hour period multiplied by the number of feeds in the period, rather than weighing every feed in a 24-hour period (Houston et al., 1983; Neville et al., 1984). Houston and colleagues (1983) reported strong correlations (0.89 to 0.97 among infants 1 to 9 days old) that were highest when two consecutive feeds were sampled as compared with one feed. Neville et al. (1984) found correlations were

higher among infants age 3 to 9 days (0.63 and 0.74) compared with infants age 21 to 56 days, where correlations were very low (0.13 and 0.09) and decreased with more feeds. Among older infants, however, Matheny and Picciano (1990) found correlations between 0.75 to 0.92 among infants 4 weeks of age and 0.70 to 0.86 among infants age 12 weeks. Mean intake differences ranged from a 0.6% overestimation of breast milk intake among infants age 4 weeks to an 8% underestimation among infants age 12 weeks.

Doubly labeled water is considered the gold standard for measuring energy expenditure. This method can indirectly estimate infant milk consumption by measuring infant's total energy expenditure. Nielsen et al. (2011), conducted The First-Feed study in Scotland with an objective to test whether and how human lactation and breastfeeding practices can adapt to fulfill infant energy requirements during exclusive breastfeeding for six months. Fifty healthy exclusive breastfeeding mother-infant dyads were recruited. This study used doubly labeled water method to measure milk intake, energy intake, and milk energy content. Overall, this study concluded that milk intakes were higher and increased throughout time to meet infant energy requirements during exclusive breastfeeding up to 6 months. Researchers believe that this can be accomplished without major constraints on breastfeeding practices when following national recommendations along with support while breastfeeding.

The researchers for the National Maternal-Infant Health Survey created a lactation intensity ratio, ranging from 0 to 1, to estimate the amount of breastfeeding based in maternal recall. Breastfeeding intensity can be measured as a ratio or a percentage. Breastfeeding intensity ratio equation: [Breast milk feeds on average over 24 hours/ (Breast milk feeds+formula feeds+cows milk feeds+other milk feeds on average over 24hrs)]. To express as a percentage, you would multiple the ratio equations by 100 (Piper & Parks, 2001). Currently in research, two equations are

used to estimate breast milk volume via maternal recall and infant age. The first of the two equations are the replacement calculation. This calculation assigns a daily volume of milk for breastfed infants and assumes that other milks replace breast milk intake. Breastfed infants aged 0 to 5.9 months are assigned 780ml (26 fl oz.) of breast milk per day, which is consistent with the Dietary Reference Intakes (DRI's) for infants <6 months old. Replacement calculation was derived from two studies from Dewey and Lonnerdal's conducted in 1983 and Heinig and colleagues' study from 1993. Dewey and Lonnerdal found an average breast milk intake of 787mL/d over the first 6 months. Similarly, Heinig and colleagues' study's average breast milk intake was 790.5mL/d over the first 6 months.

2.3 Maternal Experiences and Barriers Related to Breastfeeding

Experiences and barriers related to breastfeeding have been well-researched. Below, several relevant factors will be discussed below including galactagogues, interactions with health care providers, decision making among feeding practices, and self-efficacy with perceived insufficient milk supply.

Experiences of breastfeeding mothers regarding pharmaceutical and herbal galactagogues is becoming increasingly important in understanding its effect on human milk supply, yet research is still scarce. An exploratory, cross-sectional study looked further into studying breastfeeding women's experiences with galactagogues and how they can improve lactation (Bazzano et al., 2017). Researchers used an online questionnaire and sampled 188 women who use Internet-based breastfeeding websites. Characteristics of the respondents include 76% reported they felt as though they were not making enough milk to meet their child's nutritional needs and over half of the

women (54%) did not supplement with formula when insufficient milk production was assumed. Majority of the mothers (94%) did not take pharmaceutical galactagogues. Fenugreek was the most well-known and used galactagogues, used by 46% of the respondents. Women reported fenugreek, goats rue, and Motherlove More Milk (Motherlove Herbal Company, 2020) as herbal galactagogues that increased their milk supply. Eight five percent of women in the study sought breastfeeding support from sources other than health care professionals in this study (Bazzano et al., 2017). This was one of the first research studies on the use of galactagogues in the United States.

A focus group study conducted by Flaherman et al. (2012), asked mothers to describe maternal experiences of interactions with health care providers related to milk supply. Focus groups were conducted with four focus areas: 1) maternal expectations of breastfeeding during pregnancy and initial breastfeeding experiences; 2) maternal experience of interactions with pediatricians, obstetricians, and nurses regarding breastfeeding; 3) maternal perception of the infant weight measurement and its effect on milk supply concern; and 4) maternal reaction to specific provider recommendations regarding milk supply. After conducting ten focus groups with 56 mothers, researchers found five emerging themes: 1) expectations of breastfeeding and milk supply, 2) interactions with providers regarding milk supply evoked strong emotions, 3) maternal experience of interaction with providers differed by type of provider, 4) interactions with providers regarding newborn weight, and 5) maternal experiences of interactions with providers discussing formula. This research suggested that improving counseling techniques regarding concerns about mothers milk supply might have a significant impact on breastfeeding outcomes.

A prospective, qualitative study looked at a sample of 20 racially and ethnically diverse mothers who were recruited in the first two weeks postpartum during clinic visits (Peacock-

Chambers et al., 2017). The objective of the study was to examine factors that influence maternal decision-making surrounding infant feeding practices over time. They conducted in-depth semi structured interviews with questions that fell into five main categories: 1) advice, 2) intended feeding plans and actual feeding practices, 3) anticipation of feeding challenges, 4) questions regarding infant care, and 5) psychosocial stressors. Follow-up interviews included nine additional categories and demographic data was collected using structured questionnaire at the conclusion of the interviews. Researchers identified the following five themes related to mothers decision making process surrounding infant feeding practices that were related to PIMS: 1) social isolation and lack of social support; 2) challenge of returning to work; 3) ease of formula feeding in the U.S. compared with home country; 4) varied perceptions of infant temperaments; 5) discordant feeding plans and practices. Overall, all participants initiated breastfeeding and 65% reported PIMS. A predominant theme was identified showing a relationship between PIMS and behavioral control.

McCarter-Spaulding and Kearney (2001) conducted a cross-sectional descriptive correlational study to develop a measure of perceived breast milk supply and to explore the relationship between parenting self-efficacy and maternal PIM. They proposed that women with a higher self-efficacy in their ability to breastfeed would be associated with higher confidence with breastfeeding. The study recruited 60 participants from two pediatric practices. The PIM Questionnaire was developed as a six-item scale. The first item was a nominal measurement (yes/no) and the five following questions were measured on a 10-point Likert scale (0= strongly disagree to 10=strongly agree, higher number referring to a higher perceived adequate milk supply). Items in the questionnaire included: 1) Do you believes you are producing enough milk to satisfy your baby? 2) My breast milk looks like it is nutritious enough to nourish my baby, 3) My baby generally appears satisfied after feedings, 4) My baby seems to like to breastfeed, 5) My

breast milk is all the nutrition my baby needs to thrive, and 6) My breasts seem to have enough milk. Mothers answers to the six items were summed to generate an overall PIM score. The mean total PIM score was 45.06 (SD= 5.13, with a range from 24 to 50. The researchers found a moderate correlation between parenting self-efficacy and PIMS. Further testing needs done using this instrument in diverse, larger samples prior to this tool can be utilized in a healthcare setting.

2.4 Perceived vs. Actual Insufficient Milk Supply

Many women who originally intended to breastfeed longer instead find themselves weaning prematurely with either perceived or real insufficient milk. The perception of insufficient milk supply is defined as the perception that a mother has inadequate supply of breast milk to meet her infant's needs (Hill, 1989). Research has found that this is the most reported problem three to six weeks postpartum by an estimated 50% of women (Li et al., 2008). There are several factors that can contribute to perceived lactation insufficiency, including but not limited to socio-cultural influences, mother's psychological state, perceived infant difficult temperament, and inconsistent breastfeeding support that may undermine a mother's confidence if she is providing sufficient nutrition to the infant (McMeekin et al., 2013; Dykes et al., 1999).

A major barrier for some lactating women is perceived or real milk insufficiency. Milk supply is the volume of breast milk in the breast. Supply relies on three factors: efficiency of baby's sucking, mother's breasts ability to produce milk, and the milk ejection reflex (Neifert, 2004). Mothers who are not familiar with normal breastfeeding patterns may struggle to feel confident in their bodies' ability to produce adequate milk. Mothers may perceive the need to breastfeed more often as a sign that milk supply is not adequate, either in quality or quantity. As a result, mothers

may unnecessarily supplement their milk, which may result in a true decrease in milk production (Walker, 2007).

Many breastfeeding specialists and lactation consultants have recommended various drugs and herbs when other nonpharmacological measures have not resulted in an increase in milk volume. However, some mothers choose to try or providers may inappropriately recommend galactogogues before emphasizing the primary means of increasing the overall rate of milk synthesis (i.e., frequent and effective milk drainage at regular intervals), or evaluating other medical or normal physiological adaptions that may potentially be involved (Brodribb, 2018).

Emerging evidence is showing that primary lactation insufficiency is more common than previously thought and may be more common with higher maternal pre-pregnancy weight status and maternal endocrine disorders including diabetes and polycystic ovarian syndrome (Vanky et al., 2008 & Baker et al., 2007). In addition, a recently published study further demonstrated that there are underlying biological reasons for low milk production in some women (Rivera et al., 2020). Their findings demonstrated that the Thr288Ser mutation in *SLC30A2*/ZnT2 impairs critical functions of mammary epithelial cells and propose a role for genetic variation in the regulation of milk production and lactation performance. Adequate milk production requires adequate mammary tissue, intact ductal and neurological pathways, and appropriate concentrations of hormones (Czank et al., 2007). Primary lactation insufficiency is rare but can exist in women who have or had breast surgery, Sheehan's syndrome, and hypoplasia (Kent, 2012). Causes of secondary lactation insufficiency can be grouped into large categories of poor lactation management, infant-related challenges, and hormonal or drug effects (Amir, 2006). Mothers are more likely to identify PIMS if they are cognizant of their infant's satiety cues (McCarter-Spaulding, & Kearney, 2001). Kent and colleagues (2016) discussed several strategies that can

improve milk supply in the first 24 hours of life, including skin-to-skin contact and frequent (8-12 times/day) breastfeeding. Throughout the breastfeeding journey, mothers should increase the frequency and quantity of milk removal to stimulate milk production (Kent, 2012).

A prospective study questioned, "What is the current rate of real lactation failure in humans?" The researchers found 15% of women had lactation insufficiency (n=319) (Neifert et al., 1990). Lactation was deemed sufficient when an exclusively breastfed infant achieved an average weight gain of 28.5 g or more per day between the two visits. In this same study, certain factors were noted including previous breast surgery, minimal prenatal breast enlargement, and minimal postpartum breast engorgement as risk factors for milk insufficiency. This was defined as infants who had failure to appropriately gain weight (Neifert et al., 1990). A similar study conducted by Odom et al. (2016) investigated reasons for earlier than desired cessation of breastfeeding. Researchers looked at 32 reasons mothers reported for cessation of breastfeeding, 13 were significantly associated with increased odds of not meeting desired duration (adjusted Odds Ratio range: 1.28–4.42) and were related to lactation, nutrition, medicine/illness, and milk-pumping concerns. The most prevalent reasons for early cessation from this research was perceived insufficient milk supply. Some of other the reasons related to lactation and specifically milk production included breastfeeding was too painful, breasts overfull or engorged, nutritional problems (e.g., didn't have enough milk, concerned about infant weight gain) and concern regarding the milk-pumping factor (e.g., pumping milk no longer seemed worth the effort that it required). Similarly, a study of 500 mothers who stopped breastfeeding completely before six months found that the most common reasons noted were inconvenience or fatigue associated with breastfeeding (22.6%) and concerns about milk supply (21.6%) (Brown et al., 2014). Consistent results were found in a 2008 study where among mothers who stopped breastfeeding through the

first 8 months of their infant's life, the perception of their infant's dissatisfaction with breast milk alone and concerns about milk supply were both consistently cited as important reasons for stopping, and their infant's dissatisfaction with breast milk was continuously cited as a top reason even among women who stopped breastfeeding after 8 months (Li et al., 2008).

A recent study using a predictive correlational longitudinal design investigated the relationship between PIMS and actual insufficient milk supply (AIMS). In addition, researchers were interested in what contributions that physiological and psychosocial factors had on PIMS and AIMS in 123 first-time mothers. Questionnaires and interviews were conducted at day 3, two weeks and six weeks post-partum. Instruments used to measure infant capacities include Infant Breastfeeding Assessment Tool (IBFAT), Breastfeeding 24-hour milk production and the 'Irritability during feeds' subscale of the Mother and Baby Scale. Mothers completed the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) at day 3 and week two, along with PIMS and AIMS questionnaires. The results of this study found no significant relationship between PIMS and AIMS. Mother's self-efficacy and number of feedings were found to be associated with PIMS at week two. Skin-to-skin contact at birth and number of feedings were related to AIMS at week 2 by measuring 24-hour milk production (Galipeau et al., 2017).

2.5 Nutrition and Milk Supply

Increasing evidence shows that adequate nutrient intake and appropriate nutrient homeostasis are important for maintaining maternal energy balance (Lee & Kelleher, 2016). Additionally, severe caloric restriction has significant negative effects on milk production, secretion, and composition (Lee & Kelleher, 2016). Randomized clinical trials on maternal diet

during pregnancy are limited in humans due to ethical concerns. Maternal fat intake directly impacts the type of fat proportion but not overall proportion of fat in milk. In addition, the mother's energy balance including obesity, fasting/starvation, and physical activity may impact lactation success (Lee & Kelleher, 2016).

Galactagogues or (lactogogues) are pharmaceutical agents, food, drink, herbal preparations that are thought to assist in the initiation, continuation, or augmentation of breast milk production (Brodribb, 2018). Galactagogues can be pharmaceutical or herbal in form, but efficacy is still unclear in the absence of high quality research. Little is known how exactly herbs function as galactagogues. The common strategy is to boost prolactin production, which is one of the key hormones responsible for lactogenesis. Proposed primary mechanisms include estrogenic effect on mammary glands and proliferation of secretory cells mammary cells (Mortel & Mehta, 2013).

Breastfeeding is influenced by nutritional and non-nutritional factors that affect milk synthesis and secretion. Galactagogue food consumption has been significantly correlated to human milk volume (Buntuchai et al., 2017). Food items containing galactagogues are an option for improving milk production. A prospective, one-group, nonexperimental designed study investigated whether Thai mothers who consumed more galactagogues produced a greater milk supply that those who ate less (Buntuchai et al., 2017). The study had a sample of 36 breastfeeding mothers with a mean age of 29.4 and their infants mean age 8.4 weeks. Mothers characteristics include married (94%) and college educated (64%). A semi-Food Frequency Questionnaire (FFQ) was used to record the frequency, type, and amount of galactagogues consumed during the mothers past month. The semi FFQ included 51 food items, which were divided into 16 groups based on plant family and kind of protein. Foods of interest included banana flower, lemon basil, Thai basil, bottle gourd, pumpkin, and some protein rich foods. Maternal energy and nutrient intake were

measured using a 24-hr recall, and women were asked to recall foods and beverages they consumed over the previous 24 hrs. This study found significant positive correlations between consumption of galactagogue foods and human milk volume when controlling for infants' birth weight, weight-for-age, maternal energy and carbohydrate intake. However, this study had several limitations, including small sample size and the inability to control for potential confounders.

A recent study conducted in Italy, The Herbal supplements in Breastfeeding InvesTigation (HaBIT) investigated attitudes, beliefs, and knowledge of complementary and alternative medicines (CAMs) in breastfeeding women (Bettiol et al., 2018). Over a six-year period, 304 breastfeeding women were recruited. Data was collected using a semi-structured web-based questionnaire and 204 (52.58%) women were CAM users while breastfeeding. Classification of CAM was divided into eight categories including dietary supplements, herbal preparations, homeopathic preparations, phytotherapeutic agents, traditional practices, natural preparations, domestic preparations, others, and acupuncture. The most taken CAMs were dietary supplements (48.04%) and herbal preparations (31.86%). Majority (73%) of the women believed CAM's were equally safe or safer than conventional medicine.

The literature reviewed provides a solid background on human milk (insufficiency, measurement, nutrition, and self-efficacy) identifying already established research and where the gaps are within the literature. Maternal experiences and beliefs about milk supply and insufficiency relates to many factors that have been explored in this chapter.

3.0 Methods

3.1 Inquiry Questions

To better understand the current experiences and barriers of mothers with perceived insufficient milk supply (PIMS) in Southwestern, Pennsylvania, the following inquiry questions will be asked:

1) What are the current experiences and barriers of breastfeeding mothers with PIMS?
2) What were the mothers expectations of breastfeeding during pregnancy and their initial breastfeeding experiences?
3) When mothers have problems breastfeeding, where do they look for advice/help? What advice/help did they receive?

3.2 Inquiry Design

The use of improvement science inquiry design allowed the primary investigator to investigate and focus on experiences, barriers, expectations, and resources related to insufficient milk supply in a specified context through a plan-do-study-act (PDSA) cycle. Improvement science theorizes that two different types of knowledge are needed, 1) basic knowledge from the discipline of education and 2) system of profound knowledge needed to enact basic disciplinary knowledge within organizations (Langley et al., 2009). Improvement science may allow the primary investigator to build a consensus from mothers and health care professionals on the

importance of breastfeeding initiation and duration and how to measure its improvement (Lewis, 2015). For the purposes of this inquiry, the inquiry design is a needs assessment, the first step of improvement science.

3.3 Inquiry Setting

The University of Pittsburgh is situated in Pittsburgh, a city in the commonwealth of Pennsylvania, and the county seat for Allegheny County. The city of Pittsburgh is home to approximately 301,000 residents, and fifty-one percent of whom are female. Pittsburgh has a diverse mix of neighborhoods and cultures. As of 2019, the predominant racial/ethnic make-up of the city of Pittsburgh was white (66.9%) and black or African American (23.2%) (U.S. Census Bureau, 2019). It was projected that in 2019, approximately 13,000 babies would be born in Allegheny, County (Pennsylvania Department of Health programs, services and health information, 2019).

There are several local organizations who interact with and serve breastfeeding mothers and/or their infants in the city. Some of these organizations include the Mid Atlantic Mothers' Milk Bank, Breastfeeding Center of Pittsburgh, Children's Community Pediatrics of University of Pittsburgh Medical Center (UPMC), and Magee Women's Hospital of UPMC. These organizations provide services to mothers including educational classes, support groups, as well as preparation and support of prenatal care and postpartum breastfeeding. The Mid Atlantic Mothers' Milk Bank also accepts breastmilk donations to provide to other mothers in all steps of their breastfeeding journey, but primarily focused on serving the most vulnerable infants.

3.4 Participants

Participants were eligible to participate if they were women ≥18 years old, living in Southwestern Pennsylvania, English-speaking, with healthy term infants between one month and 24 months of age, who have breastfed, and reported PIMS while breastfeeding their infant. Breastfeeding was inclusive of any mother who has provided human milk to her infant, regardless if the source is from the breast or bottle. Perceived insufficient milk supply was assessed with a questionnaire during the initial eligibility recruitment call. The recruitment questionnaire included ten closed and open-ended questions that were arranged in a logical order from general to specific (Appendix A). Mothers were excluded if they had any issues that would significantly interfere with breastfeeding (e.g., serious medical condition of mother or infant) or carried more than one baby at a time (multiples).

Participants for this study were recruited by flyers distributed and posted across the University of Pittsburgh in lactation rooms and on bulletin boards, in primary care sites, local organizations that serve breastfeeding women, as well as electronically through Facebook (breastfeeding groups in Southwestern Pennsylvania). In addition, the study was advertised through a recruitment posting through the University of Pittsburgh's Clinical and Translational Science Institute (CTSI)'s Pitt+Me website (https://pittplusme.org/).

Interested participants called or emailed the primary investigator and were screened during an initial telephone call. Participants were asked questions to determine eligibility using a standardized, phone-screening script (Appendix A). Participants had the right to terminate the screening/telephone call at any point in time and could elect not to answer any of the questions asked. Forty-two mothers were screened for eligibility and 39 (93%) screened eligible and agreed to participate. The five mothers who screened ineligible did not meet the inclusion criteria;

specifically, one mother's milk supply was not moderately or significant low, two mothers had multiples and two mothers had premature infants (born <37 weeks gestation). Eleven mothers who screened eligible were unable to attend the scheduled focus group times and did not participate in the study. This resulted in a total of 26 mothers with PIMS in Southwestern, Pennsylvania that participated in the focus groups and provided complete survey data.

3.5 Measures

3.5.1 Focus Groups

Focus groups were conducted to better understand mothers' experiences and barriers surrounding PIMS. A semi-structured, focus group discussion guide (Appendix B) was used to guide the questioning route, beginning with an opening question to allow mothers to build rapport, and get the mothers comfortable sharing their experiences. Participants took part in a 60-90-minute focus group session in a private room at the Mid Atlantic Mothers' Milk Bank or a Carnegie Library in Pittsburgh, Pennsylvania. Four focus groups were conducted that included three to eleven participants, each. The total number of focus groups was determined during data collection with initial analyses and concluded when adequate saturation of data was reached (Schensul, Schensul, & LeCompte, 1999). It is recommended to plan three or four focus homogenous groups containing five to eight participants in order to reach adequate saturation. The primary investigator and mentors determined saturation was met when no new data emerged from the focus group sessions. Our focus groups were small enough to allow everyone to have an opportunity to share insights, yet large enough to allow for diverse perspectives (Kruger & Casey, 2015). A graduate-

level nutrition student attended and took notes during the focus group discussion and monitored the recording equipment. All audio-recordings were labeled and backed up on an electronic server. The research team conducted a 10-15-minute debriefing after participants left the room. This meeting was used to clear up any confusion or questions between the primary investigator and graduate student that may have been forgotten by the time of analysis.

3.5.2 Survey

Demographic Characteristics. The survey included close-ended questions, and majority of the survey was adapted from previously validated surveys used with mothers of breastfed infants (Heinig et al., 2006). Participants responded to specific questions regarding their age, race/ethnicity, marital status, education, employment status, and SNAP/WIC participation. Income level was assessed by asking mothers to select if they were receiving benefits from the Supplemental Nutrition Assistance Program (SNAP) or Women Infants and Children (WIC).

Pregnancy/Breastfeeding History. Participants responded to questions about their most recent pregnancy and birth experience, parity, and infant gender, infant age (months), infant's birth weight (ounces), reported duration of breastfeeding (months), and reported age at introduction of solid food (months) (Heinig et al., 2006).

3.6 Data Collection

During November and December 2019, a survey was given to participants to complete via paper/pencil prior to the start of the focus groups. The session began with an introduction

welcoming and thanking mothers for attending, review of the purpose for the session, provided a brief overview of the focus group process, allowed participants to give their verbal consent, and established ground rules to encourage positive participation (Appendix C). Participants were provided the opportunity to ask (and have answered to their satisfaction) any questions related to the study after reading the introduction.

Participants were offered refreshments and received a $25 honorarium for participation. Infants were permitted to attend the focus group, and childcare was provided for older children. All sessions were audio recorded and transcribed verbatim using transcription software (Otter.ai, Los Altos, CA). The University of Pittsburgh Institutional Review Board (IRB) reviewed and approved all protocols prior to study initiation (STUDY19070032).

3.7 Statistical Analysis

Both quantitative and qualitative data was analyzed. The quantitative data analysis was primarily descriptive, assessing percentages or means and standard deviations for participant demographics and pregnancy/breastfeeding history. The analysis was conducted with SPSS Statistics 25 (IBM SPSS Software, Armonk, New York, U.S.). The primary investigator pilot-tested the questions with primary mentors to ensure they were clearly worded. In addition, during the focus groups, the facilitator listened to and observed the participants during the discussion and sought clarification on areas of ambiguity. We concluded each focus group, by summarizing the discussion with the participants to ensure that the results were dependable and accurate (Kruger & Casey, 2015). Qualitative data (i.e., transcripts and field notes) were coded and analyzed using the constant comparison method to identify overarching themes and patterns in the data (Krueger &

Casey, 2015). The primary investigator read and coded the transcripts to identify and categorize recurrent themes. Earlier focus group sessions informed questioning and direction in later focus groups to establish convergence. The primary investigator generated an initial coding book (Appendix E), based transcripts and field notes. The primary investigator had regular discussions with primary mentor about evolving codes and sampling. A classic analysis of the transcripts (Krueger & Casey, 2015) was done using Microsoft Word. The structuring of the analysis was organized around themes rather than around questions. Participant quotes were used as evidence to capture the essence of what was said during the focus group discussions. During the analysis, the primary investigator identified patterns in the data and was able to discover relationships among beliefs and experiences in the participants (Kruger & Casey, 2015).

4.0 Results

4.1 Survey Results

All mothers were between the ages 18-44 years old, with 54% of the mothers between the ages of 25-34 years old. Many of the participants were married (n=22) and the remainder reported having a partner (n=4). Mothers were generally college educated (n=24) and employed (n=19). Three mothers reported receiving SNAP/WIC benefits at the time of the questionnaire administration. Most infants were male (62%), with an average age of 11.7 $\pm$ 6.7 months and an average birth weight of 122.5 $\pm$ 19.3 ounces. On average, mothers reported breastfeeding their infants for 8.9 $\pm$ 4.6 months and on average mothers introduced solid food to their infants at 4.8 $\pm$ 2.3 months. A summary of the participant's demographic, breastfeeding and pregnancy characteristics is found in Table 1.

Table 1 Demographic characteristics, pregnancy, and breastfeeding history of n=26 mothers with PIMS participating in focus groups in Southwestern, Pennsylvania.

Demographics for Focus Group Participants	**% (n) or mean $\pm$ SD**
Age (years)	
18-24	3.8 (1)
25-34	53.8 (14)
35-44	42.3 (11)
Martial/Relationship Status	
Single	0 (0)
Have a partner	15.4 (4)

Married	84.6 (22)
Divorced	0 (0)
Separated	0 (0)
Widowed	0 (0)
Education	
High school diploma	7.7 (2)
Associate degree	3.8 (1)
Bachelor's degree	19.2 (5)
Master's degree	53.8 (14)
Terminal degree	15.4 (4)
Receiving SNAP or WIC Benefits?	
Yes	11.5 (3)
No	88.5 (23)
Employment Status	
Employed for wages	73.0 (19)
Unemployed	3.8 (1)
Stay-at-home	11.5 (3)
Student	11.5 (3)
Infant Gender	
Male	61.5 (16)
Female	38.5 (10)
Infant age (months)	11.7 $\pm$ 6.7
Infant weight at birth (pounds)	7.7 $\pm$ 1.2
Breastfeeding duration (months)	8.9 $\pm$ 4.6
Introduction of solid food (months)	4.8 $\pm$ 2.3

NOTE: The variable 'infant weight at birth' was only reported by n=24 mothers

4.2 Focus Group Results

Four distinct themes emerged during the focus groups sessions. These themes are rooted in the Social Ecological Model (SEM), which provides a comprehensive approach to understanding health-based choices and influences encouraging an in-depth examination of personal attributes and environmental circumstances that affect health (McLeroy, 1998; Bronfenbrenner, 2009). As seen in Figure 1, the SEM utilizes a conceptual framework that focuses on individual, interpersonal, organizational, community, and public policy influences (McLeroy, 1998; Bronfenbrenner, 2009). The findings of this research study are related to barriers and supports experienced by mothers with PIMS across levels of the SEM: 1) individual, 2) interpersonal, 3) organizational, and 4) societal/community. Below we describe these themes in detail with some illustrative quotes from the focus group discussions.

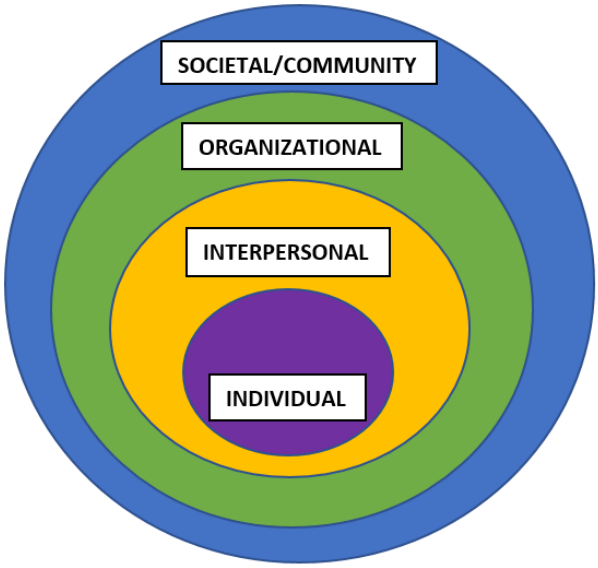

Figure 1 Social Ecological Model

Table 2 Themes and Categories

Themes	Core Categories	Categories
Theme 1: Making peace with insufficient milk supply	Low milk supply and individual attitudes and perceptions	• Coping Strategies • Methods used to boost milk supply
Theme 2: Balancing and empowering	Low milk supply and interpersonal supports	• Return to work • Support from family/friends
Theme 3: Contradictions and Conflict	Low milk supply and organizational facilitators/ barriers	• Contradictory recommendations • Transparent information
Theme 4: It's not Black or White	Low milk supply and society	• Stigma • Societal Expectations

4.2.1 Theme 1. Making peace with insufficient milk supply

Mothers from all focus groups reported stress and anxiety related to milk supply concerns when breastfeeding. Although most mothers said they would breastfeed again if they had the opportunity, there were several mothers who expressed their frustrations connected to the barriers they experienced on an individual level throughout the discussions. This was illustrated with a quote, *"Every day I hope I pump enough, and I don't feel like oh my, there's not enough here. I have some in the freezer. I have some in the fridge, but what if I just don't pump enough today and it's just constantly in my brain for like an anxiety inducing situation."* Another mother talked about this stress of a low milk supply, *"I started to get into a vicious cycle, because when I get stressed out about it, then I feel like it affects my milk supply more and it's hard to break out of that."*

The participants mentioned several strategies they used to boost milk supply and saw mixed results with galactagogues. Positively, mothers found hydration to be consistently helpful with maintaining and increasing milk supply. *"I feel like I'm constantly dehydrated, and I feel like that really affected my supply, but I swear by [those body armour drinks.] I feel like that helped. I definitely can tell if I don't drink enough water in a day, I would have low supply."* Mothers in all groups mentioned that it may have been a placebo effect and were afraid to stop or start a galactagogue or practice because it could potentially affect their milk supply. Throughout all focus group sessions, unsuccessful attempts to increase milk supply were discussed. One mother said, *"……but then next week rolled around and my supply was back down, and I was just making it. So, then I tried these cookies, milk cookie things and that wasn't working and then I tried the pills… those didn't work."*

Another participant discussed, stepping back to focus on self, "*Give yourself permission to put you in your baby first. Take today to sit in my chair and focus on this baby.*" The connection between mother and baby, embracing this connection was discussed when mothers may become overwhelmed. Concluding with this statement, "…..*baby taught me a lot, taught me everything I know about being a mom! It is a baby that gives the cues. I did not know how the things would work. We figured it out together. It is strange. It's Really cool."*

4.2.2 Theme 2. Balancing and Empowering

Returning to work and maintaining their milk supply brought up frustrating experiences for mothers, particularly with pumping, workplace support, and the need to supplement formula. Mothers explained their experiences with returning to work, *"I went back to work, and I was pumping there and [my milk supply] plummeted again. But that made me feel like a loser too. I*

was pumping like 12 times a day, and nursing and my nipples were falling off and it was just a lot of pressure." Another participant discussed, ***"****Pumping was not fun because I was literally at work and typing with one hand and holding the breast pump with the other hand and a boss would come over and talk to me through the little divider thing that I put up in our workplace."*

Another discussion point, was advocacy for women in the workplace particularly when breastfeeding, *"Seriously a man said to me at my job, 'You get another break?' I would love to not be doing this, it's not fun or you can't even relax if you have to sit like this, in a chair, not relaxing."* Mothers felt strongly about advocating for their decision to breastfeed with one participant saying, *"I think the other thing I wish I would have just been a stronger advocate for myself, being like, no, I'm not going to pump in a men's restroom. You are supposed to give me this break. I need an office or whatever. And I think like the whole guilt thing."*

Theme 2 also highlighted some of the participants struggles with continuing to breastfed in an absence of familial support. Many of the mothers reported negative interactions with family members based in their decision to breastfeed their child. They evoked strong emotions when this was discussed in the focus group sessions. One mother stated, *"My mother in law called me* 'vaca.' *They are Dominican. Yeah, she called me* 'vaca' *which means cow."* Mothers reported being frustrated after their interactions with their parents and/or in-laws, *"'Can you just put some milk in a bottle for me so I can feed my grandchild?' I was like 'get out of here!' and then she would ask if I was going to be feeding him again. He just ate. How can he still be hungry?"* Another participant shared similar frustrations with lack of interpersonal support, *"With my mom it was a battle because she just couldn't understand, 'Why are you doing this? You are torturing yourself and the baby' and I'm like, well it's healthier for the baby and I will pump whether it was one ounce or a half an ounce."* Lastly, first generation breastfeeding mothers acknowledged struggles

with family being understanding and helpful: *"I'm the first one on my side to breastfeed, my mom said that breast milk that I was expressing looked gross and it was just not supportive."*

4.2.3 Theme 3. Contradictions and Conflicts

Mothers from all groups discussed interactions with providers before and during breastfeeding with mixed emotions and experiences. Many mothers reported specific circumstances where they received conflicting recommendations from health care professionals about breastfeeding their infants. One mother shared her frustration stating, *"I'm a very homework student, do all my homework, do everything. But it is hard because there's so much contradictory information. Who am I supposed to believe?"* Another mother acknowledged that the difficulty mothers face specific to these inconsistencies in recommendations from providers, *"Every single mother I've talked to has had such different experiences not just, you know, our bodies and our babies, but every single one of us seems to say my doctor did this but didn't do that. I would love consistency; it was just consistently bad."* Another common discussion point was mothers concerns during the first feedings in the hospital and this brought on strong emotional responses from some mothers. One mother explained, *"I was having trouble, and nobody came in to help and that started the frustration with everything."*

When mothers had problems breastfeeding, specifically with PIMS, they received advice and help from a variety of individuals; specifically mentioning health care professionals (physicians, nurses, lactation consultants and dietitians). Mothers interactions with healthcare providers was somewhat evenly discussed as positive and negative. Positive experiences with health care professionals accompanied strong motivation and perceptions of breastfeeding. An example quote, *"There was a nutritionist and she helped me schedule a plan for what I was going*

to do and when I was going to do it and gave me a list of foods that can help with increase your supply and that gave me sanity." Another mother described her interactions with a supportive lactation consultant*"….the lactation consultant the second time told me, your breasts are going to feel full, that's normal. And that means that your body is making just what your baby needs. And that is good, so I think I left more confident the second time because they encouraged me that that does not mean you do not have good supply, it just means that that's normal."* Several mothers shared their positive experiences with local breastfeeding support groups. A mother described the support that a group of local mothers with shared experienced provided to her: *"And I met a couple other moms who are kind of going through the same thing with babies in the same stage. A couple of us have even stayed friends for years later. And that's been the most helpful having a group of other moms who are also going through it too."* To many mothers, these supports were consistent emotional trigger and associated with breastfeeding success and duration of breastfeeding despite PIMS.

The expectations of breastfeeding and realities surrounding milk supply was more difficult than anticipated for most mothers. Many spoke of prenatal classes and how the information provided by healthcare professionals lacked transparency about what breastfeeding is like, especially during the first month when breastfeeding and milk supply was being established. For example, *"At least for me, the class, they made it seem so seamless. Did not discuss, if you struggle, it is normal. It would have been nice to have some of those thoughts or preparation for it with your first……"* Another mother explained, *"... stuff they tell you before, they give you in a perfect world. This is how breastfeeding would work. In a perfect world, your baby would eat this many time a day, only a couple times at night, but, that's not even accurate."* A final quote relating to healthcare professionals not providing realistic expectations and realities of breastfeeding was, *"I*

thought right away that it was just going to be this beautiful process and it was not. I think just being real and honest, off the bat from the doctors, at support groups and breastfeeding classes. So just being honest, upfront, and not only with breastfeeding, but I think labor too."

4.2.4 Theme 4. It's not Black or White

A final theme that was discussed throughout all focus groups was the societal expectations and norms surrounding feeding practices. Mother's said they experienced judgement and/or felt pressured regarding their infant feeding choices, whether that was exclusive breastfeeding, giving their babies a bottle of formula, or feeding in public. One mother explained, *"Now if I give my daughter a bottle in public, I still have shame for that, which is just horrible. Like you should not have that - you are just feeding your babies. But you have that spotlight on you that feels like oh my gosh, I hope nobody sees me feeding her this and then goes, Oh, why aren't you breastfeeding? Or the opposite? If you are breastfeeding, and somebody goes, why are you doing that? You should cover up."* Similarly, another participant discussed the judgement aspect, *"….it makes it difficult to do things, publicly or socially with them, because I just don't want the spectacle or the judgment."* However, some mothers were more confident about breastfeeding around others, *"**….** And if somebody else is offended by it, then that's their problem."*

Mothers in many focus groups reported difficulty when trying to balance introducing formula and breastfeeding, circling back to the community/societal expectations about infant feeding choice. Societal views on whether a mother breastfed or not (exclusive breastfeeding, complimentary feeding, introduction of formula, etc.), led mothers to be confused and feel guilty considering the possible ramifications if they are unable to fit the perceived norm. As one mother described, *"Society doesn't set realistic expectations as far as the environment, almost made it*

sound like if we are not doing the right things and you're not going to have milk and you're going to be stressed and then you won't have a letdown."

Breastfeeding is not the social norm in many communities, and thus not supported or encouraged. On the opposite spectrum, exclusive breastfeeding can be a social norm that many mothers felt like failures if they could not produce the proper amount of nutrition needed by their baby. A mother discussed, *"And I just was like, she needs something to eat. I just was so scared, and I just gave a formula that night and then for a while I cried a couple months. It was scary. It is scary."* Another mother commented, *"I felt like in the hospital, it was so, black or white, you were either breastfeeding or you were doing formula and asking for the supplement, because my milk hadn't come in yet was viewed negative."* Mothers experienced a lot of stress and anxiety when discussing supplementing formula mainly due to the biases of infant feeding previously mentioned. It seemed that health care professionals discussed two feeding options with mothers, either you exclusively breastfeed, or you provide formula. However, in mothers with PIMS, complimentary feedings are a way mothers can possibly continue to breastfeed longer. This was evidenced by the statement, *"just being more open to supplementing because like, I absolutely did not want to use formula, I felt like I was poisoning my child and it was crazy."*

The discussions concluded with a final guided question, *"If you had a chance to give advice to a mother who was experiencing low milk supply, what advice would you give?"* Participants acknowledged their breastfeeding journey and provided suggestions to other mothers who may be experiencing low milk supply and how to succeed. Mothers agreed that everything is not necessarily black or white (good or bad) when feeding an infant. One mother stated, "*And of course, like there were bumps along the way, but I mean, for me, it's been like the most rewarding thing I've ever done*." Another mother provided advice, *"Give yourself permission to put you and*

your baby first, take today to sit in my chair and focus on this baby." Lastly, another mother discussed the struggles with breastfeeding and that mothers are not alone during this journey, *"The advice is, maybe it's really hard and it's okay. It is okay. we all struggle."*

Guidelines for breastfeeding duration and exclusivity were also discussed by the mothers during the focus groups. Mothers recognized and understood the recommendations, but for many of these mothers with insufficient milk supply, it was not an achievable reality. Lack of exclusivity of breastfeeding was discussed by many of the participants. One mom discussed how she needed to the use of formula and this helped her continue to breastfeed, *"I wouldn't worry so much about it the exclusive part and just say I'm going to do as much as I can. And the formula's here and help me out and support me. And I don't think I would have made it to 10 months if I did allow that to be the case, I would have just quit like, people think it's so black and white I breastfeed or formula and I may not."* For many of the mothers, they shared their success stories being able to breastfeed despite societal barriers, *"...I exclusively breastfed, and I'm happy that we made it. You have to be okay with it and people need to accept that as well."* Once mothers were able to accept this, they were more comfortable with the choices they were making, even if they did not align with the breastfeeding guidelines and recommendations. *"And now I have been supplementing since then and I think that because I do that, I'm more okay with continuing breastfeeding because it takes the pressure off of me."* One participant positively summarized Theme 4: Community/Societal Level, "*And I love breastfeeding because it's so important and you need to normalize the stigma. It's a natural process."*

5.0 Discussion

This needs assessment highlighted challenges and supports for mothers with PIMS . Although not initially intended, the themes identified in this inquiry were rooted in the Social Ecological Model (SEM) and the ecological systems theory, upon which the SEM is built. The SEM looks at patterns of behavior across intrapersonal, interpersonal, organizational and community/societal levels. This theoretical framework has been used in previous qualitative research to interpret perceptions of barriers and positive contributors to breastfeeding (Dunn, 2015).The current research grouped mothers' breastfeeding experiences and barriers across the levels of the SEM (individual, interpersonal, organizational, and community/societal). Although public policy was not identified as a separate theme, implications for policy cut across all four themes.

5.1 Themes 1 and 2 (Intrapersonal and Interpersonal Level)

Individual level supports and barriers mentioned surrounding low milk supply focused on the mothers attitudes, perceptions, and perceived behavioral control. Mothers' discussions centered on unrealistic expectations of breastfeeding, stress and anxiety, and methods used to boost milk supply. Similar to recently published studies, feeding difficulties, insufficient milk supply, pain and breastfeeding was different than what many mother's anticipated (Lavender et al., 2005; Santacruz-Salas et al., 2019). Combined, these barriers contributed to early cessation of breastfeeding for many mothers (Gianni et al., 2019; Odom et al., 2013). Difficulties with milk

supply was the original focus of this research and sparked interesting conversations in relation to adequate milk supply and strategies used to boost supply. Most of the mothers in this study reported generally negligible differences in milk supply with supplementation. In contrast, previous studies have documented the consumption of galactagogue containing foods/supplements to have positive correlations to human milk volume (Buntuchai et al., 2017; Bettiol et al., 2018).

Interpersonal level supports and barriers focused mostly on the role of their partner, family members, and peers that positively or negatively impacted their breastfeeding success. Consistent across all four focus groups and with previously published research, a mother's support system is a strong indicator of breastfeeding success (Dunn, 2015; Hall & Hauck, 2007; Peacock & Chambers, 2017; Odom et al., 2014). In our research, partner support was particularly regarded as extremely influential (especially during early postpartum period), either to be very supportive or inadvertently discouraging. Pressure to quit from their support system or to continue breastfeeding despite PIMS were potential emotional triggers for mothers (Gregory et al., 2015). Family support ranged between very involved and supportive, to not supportive, and/or indifferent regarding breastfeeding. A recent publication confirmed that the importance and identified associations between familial opinions and breastfeeding initiation and duration (Wallenborn et al., 2019). Mothers attributed this lack of support due to absence of experience or understanding of breastfeeding. Interestingly, family having little opinion was comforting to some of the mothers. Support from peers was also generally well received and promoted breastfeeding success and meeting goals. Mothers particularly enjoyed receiving support from other mothers with children of similar ages who were currently or previously breastfeeding.

5.2 Theme 3 and 4 (Organizational and Community/Societal Level)

Mothers have different breastfeeding experiences and challenges based on their social networks and environment. Emerging themes were revealed during the focus group that aligned with **organizational** level of the SEM. Most mothers felt that breastfeeding recommendations and information provided to them by healthcare professionals was not consistent, thus providing confusion and uncertainty to the new mothers when facing PIMS. Further, mothers conversed about how it would have been helpful to have "real" (i.e., honest) conversations with healthcare professionals and during prenatal support classes on what to expect when breastfeeding, not just the idealized norm. Transparency about what to expect prior to breastfeeding may have made the breastfeeding journey easier and normalized the problems mothers faced. The influences of breastfeeding experiences with health care professionals and inadequate or inconsistent support has been well documented in the literature (Dietrich & Misskey, 2015; Demirci & Bogan, 2017; Hall & Hauck, 2007; Lavendar et al., 2005). In the current study, prenatal support and preparation for mothers were recalled as insufficient, and mothers were rarely advised how to seek breastfeeding help postnatally. 'Advice' could be condescending and often downplayed common struggles to be insignificant or easily dealt with for all mothers. Many conversations were around how breastfeeding was *"just supposed to happen"* or that mothers were not *"trying hard enough,"* if problems arose.

Workplace support can be a significant barrier to breastfeeding success (Ortiz, 2004; Raju, 2006). Mothers reported lack of support for breastfeeding in the workplace whether that was not having an adequate/available space for pumping, protected time to express milk, and/or unsupportive coworkers. One previous study found that 53% of working mothers felt they did not need to discuss their intention to pump with their employer (Bravado Breastfeeding Information

Council, 2009). Of those that did, only 35% initiated the conversation with their employer prior to their maternity leave. Many of the working mothers in our research faced similar challenges when returning to the work. They reported feeling uncertain with milk supply volume prior to returning to work and how to maintain milk supply was compounded given their job constraints. Mothers recommended that there is an important need for considerations by the workplace for adequate services and environments for expressing milk, consistent with previous literature (Rojjanasrirat & Sousa, 2010). In the future, if these considerations are recognized by the workplace and embraced and implemented through policy and practice, we can anticipate seeing an increased number of working mothers who are able to extend their duration of breastfeeding.

The **community/societal** stigma of breastfeeding in public was a topic of discussion across all focus groups. The sexualization of breastfeeding contributing to the stigmatization of breastfeeding practices has been explored in the research and compared among different cultures (Tomori et al., 2016). Breastfeeding in public is legal and protected in all 50 of the United States (CDC, 2018). Regardless of where you live, you may breastfeed your baby anywhere that a mother is entitled to be. Therefore, anywhere you can feed a baby a bottle, you are able to nurse a baby (CDC, 2018). Mothers viewed breastfeeding as completely natural, and they felt strongly that we need to remove the bias that nursing a baby in public is not normal. One previous study echoed our focus group findings that mothers perceived breastfeeding in public was not viewed as acceptable, and there was a lack of designated spaces in public settings for mothers to breastfeed (Dunn, 2015). Circling back to PIMS and subjective norms, if mothers are unable to comfortably feed their baby in public, they may not breastfeed as often as needed or may miss/ignore babies' feeding cues to maintain supply.

Although breastfeeding decisions are made the mother and support person, some societies and communities are unsupportive, and breastfeeding remains for many a taboo. Many of the mothers in the current study stopped breastfeeding earlier than they had initially planned because the encouragement and support for breastfeeding was not always there. The work of Dunn et al. (2017) supports this finding and these researchers submit that the primary way to challenge existing breastfeeding norms among unsupportive ethnic/cultural groups is to establish public breastfeeding as the social norm. The majority of mothers in the current study felt a sense of pride in overcoming the stigma of breastfeeding in public. One mother *'felt adamant about comfort of breastfeeding in public'*, describing her determination to do it despite any shame.

Consistent with previously published literature (DiGirolamo et al., 2003; Odom et al., 2014), mothers' interactions with healthcare providers both positively and negatively affected their decisions to breastfeed. Mothers specifically discussed lactation consultants and dietitians as types of providers that positively influenced their breastfeeding outcomes.

Our research looked at maternal experiences and discussions surrounding complementary feedings. Many mothers in the focus groups felt shame and guilt when having to consider introducing formula to the infants' feeding regimens because they were experiencing insufficient milk supply. At the organizational and societal level, mothers felt it was presented to them by physicians as very "Black or White," and you could not mix the two (breastfeeding and formula feeding). These biases led to mothers feeling insecure in their feeding decisions. This was consistent with support classes where it appeared there was a clear message to exclusively breastfeed with minimal discussion of the barriers mothers may face when trying to accomplish not just breastfeeding initiation, but breastfeeding milestones.

5.3 Limitations

This study is not without limitations. The small sample of women recruited for this study were all English-speaking participants living in Southwestern, Pennsylvania. We did not assess race/ethnicity in the demographic survey and there was little representation from mothers of lower socioeconomic status. Also, mothers voluntarily participated in the focus group regarding PIMS and therefore may have a strong emotional and physical connection surrounding the topic which may not be generalizable to the larger population of breastfeeding mothers with PIMS living in the area. This sample excluded women who carried more than one child at a time. Lastly, the facilitator of the focus groups is also the primary investigator of the inquiry project, as well as a former breastfeeding mother, which could lead to unintentional bias during the facilitation of the focus groups or interpretation of the data.

5.4 Implications for Practice

The current findings suggest that additional education, support, and training is needed for breastfeeding mothers with PIMS, those who support them, and healthcare providers in Southwestern, Pennsylvania. Key implications for practice drawn from our main findings include: 1) increase PIMS screenings for mothers and referrals to local resources and support groups, 2) providers should adopt a client-centered approach tailored to each mothers' goals and experiences, and 3) include lactation in Registered Dietitian Nutritionist (RDN) training to expand their scope of practice.

5.4.1 PIMS Screening and Referral

Establishing practices to identify mothers at-risk for or experiencing PIMS to further support them during their breastfeeding journey is needed. One potential resource used in the development of this inquiry that could be used by stakeholders (i.e., healthcare providers, hospitals, local breastfeeding organizations) is McCarter-Spaulding & Kearney's (2001) self-efficacy and maternal PIM tool. This tool could be used during the mothers' postpartum follow-up visits to identify parenting self-efficacy and the concept of maternal perception insufficient milk supply. Such information would be valuable to providers so that they are able to refer mothers to additional postpartum breastfeeding resources and support groups.

Breastfeeding education programs could increase mothers' understanding regarding how to accurately assess insufficient milk supply, as well as encourage them to seek professional assistance from lactation consultants when warranted. It is possible that additional efforts will be needed in at-risk populations facing milk supply issues (Lessen & Kavanaugh, 2015). Breastfeeding education should include the mother's support system throughout the breastfeeding journey, and they need to be surrounded by positive support systems (e.g., partners, peers, family members, co-workers). Support groups could provide mutual physical and psychological support to mothers struggling with PIMS. Such support groups should be inclusive of mothers' support systems and seek to share information regarding how to support moms with milk supply concerns.

5.4.2 Healthcare Providers' Inclusivity and Transparency

Healthcare providers should reframe their view of successful breastfeeding (e.g., exclusive breastfeeding for 6 months) and instead seek to come alongside mothers with PIMS and support

them in their breastfeeding journey. Providers may need to shift their interactions, recommendations, and education with mothers facing PIMS away from clinically-driven outcomes and goals (i.e. duration of breastfeeding) to a client-centered approach focused on the mothers' satisfaction and relationship with her breastfeeding infant (Burns et al., 2016; Labarère et al., 2012; Leff et al., 1994). In the current inquiry, discussion of supplementation felt "black or white" and mothers did not feel heard or that the recommendations fit their unique situations. To meet the mother where she is at in her breastfeeding journey, providers could engage in active listening and non-directive, transparent, goal setting (Naroee et al., 2020). Such an approach could address the negative experiences and barriers mothers with PIMS encounter and would allow providers to tailor what information and referrals are shared.

5.4.3 Dietitian Training in Lactation

As our results revealed, mothers found dietitians and lactation consultants as positive supports when they were facing PIMS. RDNs are food and nutrition experts who must meet the following criteria in order to earn their credentials: complete an accredited bachelor's degree and an accredited supervised practice internship, pass a national exam, and complete continuing professional education requirements. RDNs currently practice in many settings where they may interact with breastfeeding mothers experiencing PIMS, including hospitals (e.g., Neonatal Intensive Care Units, infants with failure to thrive), corporate wellness (e.g., workplace support for working mothers), industry, private practice, community settings (e.g., WIC), and Universities and research (Academy of Nutrition and Dietetics, 2020). Dietitians are well-positioned to promote breastfeeding and provide support because of their background in human anatomy, physiology, and nutrition knowledge. It is essential for dietitians to receive additional training in maternal (pre-

and post-gestation), lactation, infant and pediatric nutrition. At the University of Pittsburgh in the Dietitian Nutritionist Program, additional courses and practice rotations have been integrated into the program curriculum to strengthen knowledge of maternal nutrition and lactation.

Currently, very few RDN's are trained as lactation consultants (i.e., LBCLC, CLC). The RDN didactic and clinical preparation provides a strong background to a pathway of becoming a lactation consultant. Additional training may increase the RDN's scope of practice, improve breastfeeding advocacy, influence in public health, and lead to advances in human milk science (Hillard & Yakowicz, 2019; Pollock & Edelstein, 2010). In addition, as dietitians become more engaged in lactation supervision, maternal diseases, and infant diseases and deaths that are associated with not breastfeeding (Lessen & Kavanagh, 2015). Dietitians serving simultaneously as lactation consultants and the nutrition expert may also decrease staffing costs and support referrals from the healthcare team.

5.5 Conclusions

This inquiry identified education and support needs of mothers with PIMS in Southwestern, Pennsylvania. The experiences and barriers identified in this needs assessment is vital in moving forward for positive change. Key implications for practice drawn from our main findings include: 1) increase PIMS screenings for mothers and referrals to local resources and support groups, 2) providers should adopt a client-centered approach tailored to each mothers' goals and experiences, and 3) include RDN training in lactation to expand scope of practice. Changes made across levels of the SEM to promote, support, and advocate for breastfeeding will likely to improve breastfeeding outcomes for local mothers with PIMS.

Appendix A Script for Recruitment Calls

Eligibility Screener

Date: _____/_____/____

BEFORE YOU BEGIN, MAKE SURE THAT YOU:

- Know the woman's name
- Make sure that it is quiet, and that you alert anyone who is walking in that you are on a recruitment call

1. **Introduce yourself.**

"Hello, my name is _____ and I'm calling about your potential interest in participating in a focus group about breastfeeding. May I speak to WOMAN'S NAME?" Once you have the woman on the phone, say *"I am calling about your potential interest in participating in a focus group about breastfeeding. We are looking at studying how mothers think about and manage breastfeeding when they feel like their milk supply is low or otherwise not satisfying their baby. Do you have a few minutes to answer a couple of questions about yourself?"*

2. **If no, say "Is there another time that it would be better for me to call back?"**
   Make a note of the suggested day/time on this form**: _____**

3. **If yes:**

"To better understand the current beliefs, practices, and supports of mothers with low milk supply in Southwestern, Pennsylvania. *We are asking you to participate in one focus group in the*

Pittsburgh area this fall. During this time, you will be asked to take part in a 90-minute focus group session at a private location in Pittsburgh, Pennsylvania. You will also be asked to complete a short 2-3-minute survey before the start of the focus group. You will be paid $25 for participating in the study. Is this a study you would be interested in participating in?" **If YES,** *"I just need to ask you a few questions to see if you are eligible to participate in the study."* **If NO,** *"Alright, well thank you for your time."* **If yes, ask the following questions (any answers in bold = NOT eligible):**

- Are you a woman over the age of 18 years old?
  - ☐ YES
  - ☐ **NO**

- Do you live in Southwestern, Pennsylvania?
  - ☐ YES
  - ☐ **NO**

- Do you have at least one healthy term child between the ages of 1 month – 24 months of age that breastfed or is breastfeeding that is not a multiple?
  - ☐ YES
  - ☐ **NO**

  If YES, "What is the birthdate(s) of your child (ren)?"_____/_____/_____

  _____/_____/_____

  _____/_____/_____

- Which statement best describes your thoughts about your milk supply/volume during the time you were breastfeeding?
  - ☐ **I was NEVER concerned about low breast milk volume or not making enough milk for my baby.**
  - ☐ **I was RARELY concerned, or my concerns were MINOR regarding low breast milk volume or not making enough milk for my baby.**

- ☐ I was SOMETIMES concerned or MODERATELY concerned regarding Low breast milk volume or not making enough milk for my baby.
- ☐ I was OFTEN concerned, or my concerns were SIGNIFICANT regarding low breast milk volume or not making enough milk for my baby.

If the woman is not eligible, say, "*Unfortunately, you are not eligible for the study because of _____. Thank you for your willingness to participate. Goodbye"*

If the woman is eligible, say, "*Great! You are eligible to participate in this study.*

4. Important follow-up questions:

- *"What neighborhood do you live in?"*

  _____

- "*What day of the week would you be available to attend a focus group?"*
  - ☐ Monday's
  - ☐ Tuesday's
  - ☐ Wednesday's
  - ☐ Thursday's
  - ☐ Friday's
  - ☐ Weekends

- "*What time would you be available to attend a focus group?"*
  - ☐ Daytime
  - ☐ Evening
  - ☐ Weekends

  Other preferred times:

  _____

- "*Would you need childcare services during the focus group?"*
  - ☐ YES
  - ☐ NO

- *"What is the best way to get in touch with you?"*
  - ☐ Phone: ( ) _____-_____
  - ☐ Email:
  - ☐ Text

5. Close out the phone call.

"Okay, that's everything I need from you. Thank you so much for your interest in our research study. I will be touch soon to invite you to a scheduled focus group!"

"Thank you. Goodbye!"

6. After hanging up:

- Assign an ID number for the woman (e.g., 01), enter information into Excel file, and file forms in the data file cabinet.

ID Number: _____

Appendix B Semi-Structured Focus Group Discussion Guide

1. Intro: Please share your first name and tell us about your family such as how many kids you have, their names and ages.
2. In what ways was the reality of breastfeeding different than the ways you thought it would be or go?
3. Now I'd like to hear about a time or times when you faced any issues/difficulty with milk supply. Probe: what were your feelings, thoughts, and what did you do to manage? Probe: Did you try anything to help you improve your milk supply? How did that go?
4. When you had this problem breastfeeding, where did you look for advice/help? What advice/help did you receive? Probe: type of information, support, people, organizations Probe: what would have helped you?
If you had a chance to give advice to a mother who was experiencing low milk supply, what advice would you give?

Appendix C Focus Group Introduction

Good morning/afternoon/evening and welcome. Thank you for taking time to join our discussion of milk supply. My name is Trisha Cousins and I will be the facilitator for today's discussion and _____ is the graduate assistant for today's discussion. The purpose of this study is to better understand the beliefs and practices of mothers with insufficient milk supply. You were invited because you are all mothers who have or still are breastfeeding, and you've experienced insufficient milk supply. We want to tap into those experiences and your beliefs and practices during your breastfeeding journey. A better understanding of these beliefs and practices will provide important information about how best to support mothers and infants in Pittsburgh during their breastfeeding journey.

Our discussion will last for about 90 minutes. We're recording the session because we don't want to miss any of your comments. No names will be included in any reports and once the recording is transcribed, it will be destroyed so you cannot be identified by your voice. The transcription will be saved in a password-protected file on a password protected computer. By remaining at the table, you give your consent to have your comments used in any reports or publications that come out of this work, without attribution of course. Your participation is voluntary, and you can stop/leave at any time.

Ground rules

- There are no wrong answers. We expect differing points of view.
- Speak one at a time: Be courteous; we want to hear from everyone. Feel free to have a conversation with one another about these questions. I am here to ask questions, listen

and make sure everyone has a chance to share. Part of my job is to make sure all of you have a chance to share your ideas.

- We have name tents here in front of us (tonight).
- Indicate the location of the bathrooms and explain there is food available; they are free to stand up and get food.
- Please turn phone on silent or on vibrate during the discussion.
- This conversation may bring strong emotions, so I would like to remind everyone this is a comfortable space for mothers to be mothers.
- Have fun!

Appendix D Breastfeeding Focus Group Survey

Please answer each of the following questions to the best of your ability.

Demographic Characteristics

1. What is your current age?

a. 18-24 years old

b. 25-34 years old

c. 35- 44 years old

d. 45- 54 years old

2. What is your martial/relationship status (circle one)?

a. Single

b. Have a partner

c. Married

d. Divorced

e. Separated

f. Widowed

3. What is the highest education degree that you have obtained?

a. None

b. High school diploma

c. Associate degree

d. Vocational degree

e. Bachelor's degree

f. Master's degree

g. Ph.D., EdD, M.D., Clinical Doctorate, etc.

4. Do you receive SNAP and/or WIC benefits?

a. Yes

b. No

5. Are you currently……?

a. Employed for wages

b. Self-employed

c. Out of work

d. A homemaker

e. A student

f. Military

g. Retired

h. Unable to work

Pregnancy/Breastfeeding History

6. How many children to do you have that breastfed and are currently under 24 months of age?

a. One

b. Two

c. Three

d. Four or more

e. None

7. Please fill in the below questions relating to your infant(s) that will be discussed in today's focus group.

a. Gender:

_____

b. Age (months):

_____

c. Birth weight (pounds):

_____

d. Reported duration of breastfeeding (months):

_____

e. Reported age at introduction of solid food (months or N/A):

_____

Thank you for your time and participation!

Trisha A. Cousins, MS, RDN, LDN, Doctor of Education candidate

Appendix E Abbreviation

CODE	DEFINITION
BACKGRND	Background and introduction of the focus group
DIFFC	Difficulty during breastfeeding journey
TRANSP	Reality of breastfeeding wasn't transparent
FRUST	Frustration during breastfeeding journey
FRUSTPUMP	Frustration during breastfeeding journey related to pumping
RTWORK	Struggles when mother returned to work
SUPRTHLP	Supports that were helpful
EMOTSTR	Emotions were strong during breastfeeding
STRANX	Stress and anxiety during breastfeeding journey
LSUPPLY	Low milk supply
SUPFORM	Supplemented formula for low milk supply or milk not coming in yet
DELIVERY	Delivery prior to breastfeeding
MOTIVE	Mother describing motivation
CONNECT	Mother describing positive connection with BF and infant
CONTRA	Contradictory information during breastfeeding journey
SUPRTNOT	Supports that were not helpful
SUPPL+	Something mentioned positive with milk supply
SUPPL-	Something mentioned negative with milk supply

ADVICE	Advice for mothers experiencing low milk supply
PREVCHILD	Noted previous child/experience impacted breastfeeding experience
EXHAUST	Exhaustion during breastfeeding journey
NOTBF	Will not breastfeed again
STOPPREG	Stopped breastfeeding because mother got pregnant
INTRFD	Introduction of food during breastfeeding journey
WEAN	Mother discussed weaning breastfeeding
BFPUB	Breastfeeding in public

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