IT TAKES AN E-VILLAGE: A MIXED-METHODS STUDY ON THE EXPERIENCE AND OUTCOMES OF BLACK MOTHERS WHO PARTICIPATE IN FACEBOOK COMMUNITIES FOR BREASTFEEDING SUPPORT

by

AYANNA ROBINSON

(Under the direction of Marsha Davis)

ABSTRACT

Breastfeeding is the most preferred source of infant nutrition, as recommended by national and international health organizations. The national rates of ever breastfed and exclusively breastfed infants through three months exceeds the goals established by Healthy People 2020. The rates of breastfeeding among African American mothers, however, falls significantly below the national average. Multiple factors including, the lack of breastfeeding support influence breastfeeding decisions among mothers. The decrease in breastfeeding among African American mothers at six months post-partum suggests that this population would benefit from targeted breastfeeding support efforts. Social media, and particularly social network sites like Facebook, are increasingly being used by mothers to exchange social support. However, few studies exist to examine social media support specifically among breastfeeding mothers. This dissertation examines the experience of Black mothers who participate in Facebook groups for breastfeeding support, their other sources of breastfeeding support, the types of support received through social network sites, and associated breastfeeding outcomes. A mixed-methods study

was conducted and included data collected through surveys, focus groups, and through qualitative content analysis. Participants reported varying levels of breastfeeding support within in-person networks and received a combination of informational, esteem, and emotional support through their Facebook groups. The results and findings suggest that Facebook groups may be used to support breastfeeding mothers in overcoming breastfeeding challenges and sustaining breastfeeding overtime. More research is needed to better understand the relationship between breastfeeding support through social networking sites and breastfeeding outcomes.

INDEX WORDS: Mixed Methods; Black Feminist Thought; Social Network Sites; Breastfeeding Support; African American Mothers; Social Media

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DEDICATION

This dissertation is dedicated to my wonderful family, who has provided me with unwavering support and unconditional love while I pursue my dreams. Naima, you are my greatest inspiration. I hope you always believe that you can accomplish anything you desire to achieve.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Breastfeeding rates have consistently increased over the past decade among all mothers, but racial disparities still exist between Non-Hispanic White and Non-Hispanic Black mothers (Anstey, Chen, , Elam-Evans, Perrine, 2017). The American Academy of Pediatrics recommends exclusive breastfeeding for first the 6 months of an infant's life and the continuation of breastfeeding along with the introduction of solid foods for one year or beyond (American Academy of Pediatrics, 2014). The national breastfeeding objectives, outlined in Healthy People 2020, reflect national breastfeeding recommendations and include increasing the number of infants who are ever breastfed to 81.9%, breastfed at six months to 60.6%, and breastfed at one year to 34.1%. The targets for exclusive breastfeeding at three months and six months, are 46.2% and 25.5%, respectively (United States Breastfeeding Committee, 2014). According to the most recent national reports on breastfeeding rates in the U.S., 83% of infants born in 2014 started to breastfeed and 55% were breastfeeding at six months, which exceeds the goals for these milestones established within Health People 2020 (CDC, 2016). However, the gap between breastfeeding initiation between Black and White infants born between 2010 and 2013 was 17.4% (Anstey et al., 2017). In 2013, 64.3% of Black non-Hispanic infants were ever breastfed, with 14.1% breastfed exclusively at six months, and 17.1% breastfed at 12 months. Breastfeeding rates among Black infants were also significantly lower than White infants in 22 states (Anstey et al., 2017). The decrease in breastfeeding rates among all mothers, and

particularly, African American mothers at 6 months underscores the need for more targeted efforts for Black mothers to sustain breastfeeding as recommended. Efforts to increase breastfeeding among this population is an important public health issue, with the potential to improve the health outcomes and have significant lasting effects (Olson, 2008).

Benefits of Breastfeeding

The benefits of breastfeeding for both mothers and their children are well established in the literature and underscore the importance of meeting the current breastfeeding recommendations (Anderson, Johnstone, & Remley, 1999; American Academy of Pediatrics, 2012; Binns, Lee, & Low, 2016; Schwartz & Nothnangle, 2015; Brown & Peuchaud, 2008). Breastfed infants have a decreased risk of childhood illness, such as gastrointestinal infections, ear infections, childhood leukemia, and necrotizing enterocolitis (American Academy of Pediatrics, 2012; Brown & Peuchaud, 2008). Breastfed infants are also at a decreased risk for sudden infant death syndrome, diabetes, and childhood obesity (American Academy of Pediatrics, 2012; Brown & Peuchaud, 2008). The benefits for breastfeeding are even more critical for preterm infants, in which the highest population of infants affected are African American infants. The added benefits of breastfeeding for preterm infants include ease of protein digestion, fat absorption, improved lactose digestion, and lower incidence of serious infectious disease (Brown & Peuchaud, 2008). Increased cognitive and neurological functioning have also been observed in breastfed preterm infants (Brown & Peuchaud, 2008; Pediatrics, 2012). The benefits of breastfeeding for mothers includes a faster return to pre-pregnancy weight, faster contraction of the uterus, delayed menstruation, child spacing, decreased risk of diabetes mellitus, and decreased risk of breast and ovarian cancers (American Academy of Pediatrics, 2012; Brown & Peuchaud, 2008). For breastfeeding mothers, the decreased risk for developing

ovarian and breast cancer is greater for younger women and for women who breastfeed for a longer cumulative duration (Brown & Peuchaud, 2008).

While any breastfeeding yields positive health benefits for mothers and babies, exclusivity and duration are important factors for optimal benefits. For many health benefits associated with breastfeeding, a dose-response relationship exists, with the greatest benefit resulting from exclusive breastfeeding for six months, that is breastfeeding without the addition of other sources of food or fluids (Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012). The most recent policy statement on breastfeeding by the American Academy of Pediatrics reviews the current evidence on breastfeeding and summarizes the dose-response relationship between breastfeeding duration and its protective effect against numerous health outcomes (American Academy of Pediatrics, 2012). According to this review, the results of studies examining the link between breastfeeding and SIDS suggest a reduced risk of sudden infant death syndrome, with a greatest reduction in risk among exclusively breastfed infants (Pediatrics, 2012). Furthermore, exclusive breastfeeding for three to four months provides a protective effect for infants against allergic diseases, such as asthma and eczema (American Academy of Pediatrics, 2012). Breastfeeding reduces the risk of overweight among children as well. However, a 4% reduction in the risk of overweight is observed per each month of breastfeeding (Pediatrics, 2012). Finally, study findings suggest that infants breastfed exclusively for at least three months have up to 30% reduction in the incidence of type 1 diabetes (Pediatrics, 2012).

The benefits of breastfeeding may be slightly greater among African Americans who suffer the burden of multiple morbidities that breastfeeding protects against, including diabetes, sudden infant death syndrome (SIDS), gastrointestinal infections, asthma, childhood obesity, breast cancer, and ovarian cancer (Jones, Power, Queenan, Schulkin, 2015; Brown & Peuchaud,

2008; Reeves & Woods-Giscombe, 2015). Several studies provide insight on the importance of breastfeeding for improving the health outcomes of Black mothers and infants (Anstey et al., 2017; Bartick, Jegier, Green, Schwarz, Reinhold, Stuebe, (2016). For example, Black women in the U.S. have close to twice the rates of triple-negative breast cancer, in comparison to White mothers, which breastfeeding may protect against (Anstey et al., 2017). Bartick et al. (2016) used Monte Carlo simulations to evaluate two hypothetical cohorts of women and their infants. Using 2012 breastfeeding rates, the results of the models revealed that suboptimal breastfeeding, defined as failing to breastfeed exclusively for six months, is associated with the increased burden of childhood diseases experienced by Hispanic and Non-Hispanic Black populations. More specifically, suboptimal breastfeeding was associated with a greater number of childhood deaths experienced by Non-Hispanic Black infants and increased ear and gastrointestinal infections experienced by both Non-Hispanic Black and Hispanic children (Bartick et al., 2016).

Barriers and Facilitators to Breastfeeding among African American Women

Common barriers to initiating breastfeeding across all groups of mothers include embarrassment, lack of support, low self-efficacy, and time and social constraints (Brown & Peuchaud, 2008). Early cessation of breastfeeding is associated with difficulty initiating breastfeeding, concerns about infant satisfaction, perceived inadequate milk production, and the need to return to work (CDC PRAMS, 2014). Other factors leading to early breastfeeding cessation include lack of societal support, media depiction of bottle feeding as the norm, promotion of commercial infant formula, and insufficient prenatal breastfeeding education (Brown & Peuchaud, 2008). While the aforementioned barriers are experienced by African American mothers as well, certain barriers to breastfeeding initiation and duration among African American mothers are commonly identified in the literature, including socio-cultural

norms and attitudes, embarrassment with public breastfeeding, returning to work, self-efficacy, apathy and lack of support among health care providers, as well as, the lack of social support from family, peers, and work places (Johnson, Kirk, Rosenblum, & Muzik, 2015; Meedya, Fahy, & Kable, 2010; Reeves & Woods-Giscombe, 2015).

Considering the barriers to breastfeeding, psychosocial factors like norms, attitudes, and self-efficacy are consistently targeted in breastfeeding promotion efforts. Self-efficacy to breastfeed, defined as a woman's confidence in her ability to breastfeed, is a commonly reported psychosocial factor that influences breastfeeding initiation and duration among African American women (Johnson et al., 2015; Meedya, et al., 2010; Spencer, Wambach & Domain, 2015). Self-efficacy to breastfeed is influenced by exposure to breastfeeding, a woman's perception of being supported, breastfeeding experiences, and physical and mental status (Johnson et al., 2015; Meedya et al, 2010). Multiple studies suggest that knowing another breastfeeding mother increases a mother's comfort with the idea of breastfeeding and the confidence in her ability to succeed (Reeves & Woods, 2015; Chapman, 2012). According to Bandura's self-efficacy theory, it is critical for a mother to identify role models she perceives as similar to herself in order to improve her perception of her ability to be successful (McCarter-Spaulding & Gore, 2012).

Broader cultural views and historical experiences regarding infant feeding negatively impact breastfeeding decisions among African American mothers (Johnson et al., 2015; Kim, Fiese, & Donovan, 2017). Across several studies, norms that reflect the preference for formula feeding over breastfeeding are pervasive among African American populations (Johnson et al., 2015, Reeves et al., 2014; Gross, Powell, Anderson, Hall, Davis, & Hilyard, 2015). Bai, Wunderlich, & Fly, (2011) used the Theory of Planned Behavior to create a survey that explored

factors that positively influenced mothers' decisions to breastfeed exclusively for six months. For African American mothers in this study, subjective norm, which included beliefs held by family members and the general public, was the largest predictor of exclusive breastfeeding at six months (Bai et al., 2011).

Exposure to breastfeeding, through family members and the media, not only influences breastfeeding self-efficacy, but also influences a mother's perception of breastfeeding as the norm (Gross et al., 2015; Tuan, Kim, Tuan, Hajeebho, Tran, & Alayon, 2016). A randomized control trial conducted in Viet Nam evaluated the combined and individual effects of a mass media campaign to promote breastfeeding and interpersonal counseling on exclusive breastfeeding practices (Tuan et al., 2016). The purpose of the mass media campaign was to shape breastfeeding norms and to advocate for supportive policies and services to support breastfeeding. Interpersonal counseling provided knowledge, skills, and support. The results of multiple linear regressions and structural equation modeling showed that the combination of interpersonal counseling and the mass media campaign, in comparison to each component individually, led to greater changes in psychosocial factors, which in turn, positively impacted breastfeeding behaviors (Tuan et al., 2016). Separately, the mass media campaign and interpersonal counseling in the study by Tuan et al., (2016) were also significantly associated with more positive social norms surrounding breastfeeding. The findings from this study underscore the influence of media in shaping breastfeeding norms. Unfortunately, African American mothers cite the lack of images of African American breastfeeding mothers in the media, which is a missed opportunity to shift cultural norms surrounding breastfeeding within this population (Asiodu, Waters, Dailey, Lee, & Lyndon, 2015; Gross et al., 2015).

The importance of breastfeeding support is also well documented in the literature (Brown, Raynor, & Lee, 2011; McCarter-Spaulding, 2012; Henderson, Redshaw, & Quigley, 2014). In a 2012, Cochrane review on interventions to provide breastfeeding support for mothers, mothers who received additional breastfeeding support from professionals and trained laypersons, in comparison to receiving usual care, were significantly more likely to report breastfeeding at six months (Britton, McCormick, Renfrew, Wade, & King 2012). The review included 14 randomized controlled trials or quasi randomized controlled trials. The intervention mode of delivery was examined as well, with face-to-face interventions having the greatest impact on breastfeeding duration (Briton et al., 2012). Face-to face or telephone interviews were the only modes of delivery included in the review, however. In addition, interventions included in this review did not commonly distinguish between the types of support provided to mothers.

Social Media and Breastfeeding

Among the actions detailed in the Surgeon General's 2011 call to action to support breastfeeding mothers, was the use of new media and forms of electronic communication to reach young women and their families (Services, 2011). A historical examination of the promotion of breastmilk substitutes demonstrates how marketing and advertisements through media can influence a mother's decision to use infant formula by shaping norms and attitudes (Piwoz & Huffman, 2015). Social media, described as internet-based applications that allow for the creation and exchange of user-generated content, affords the opportunity to connect mothers with online communities of breastfeeding support, while also sharing content that may positively influence norms and attitudes relating to breastfeeding (Greaves, 2016; Snelson, 2016). Examples of social media include blogs, social network sites (e.g. Facebook), and mobile

applications. It is estimated that by 2020, 2.67 billion people around the world will have social media accounts (Statista, 2016).

Social network sites (SNSs) are the most popular form of social media, with Facebook remaining the most popular site by far (Pew Research Center, 2016). Facebook supports a variety of user generated visual and multimedia content for audience engagement and allows users to participate in interactive discussions. Seventy-nine percent of online adults, or 68% of all Americans, use Facebook and the majority of Facebook users are women (McCann & McCulloch, 2012; Pew Research Center, 2016). According to a study by the Pew Research Center, half of mothers who report using the internet also report using social media to exchange social support (Duggan, 2015). African American breastfeeding mothers have also reported their use of social media and the internet to access information and support for breastfeeding (Asiodu, 2015). While the use of web-based interventions and social network sites to provide social support has been explored, empirical knowledge on the use of Facebook groups specifically to provide breastfeeding support for mothers is limited (Bridges, 2016; Holtz, Smock, & Reyes-Gastelum, 2015; Lau, Htun, Tam, & Klainin-Yobas, 2016; Meng, Martinez, Holmstrom, Chung, & Cox, 2017).

Purpose of the Study

This dissertation therefore expands on the existing body of literature examining social network sites, specifically Facebook, to provide breastfeeding support for mothers (Holtz, et al.; Bridges, 2016). More specifically, this dissertation examines how African American mothers, as a group with lower breastfeeding rates, seek and experience social support for breastfeeding within social network sites. In addition, this study explores the relationship between the use of

SNSs for breastfeeding support and breastfeeding outcomes, using an integrative model that has not widely been applied within breastfeeding studies.

This study targeted Facebook groups dedicated to providing African American mothers with breastfeeding support to answer the following research questions.

Research Questions

RQ1: What is the experience of African American mothers who participate in breastfeeding support groups on social network sites?

RQ2: What are the types and sources of breastfeeding support received by African American breastfeeding mothers who participate in breastfeeding support groups on social network sites?

RQ3: In comparison to other sources of breastfeeding support, what is the relationship between breastfeeding support received from SNS support groups and breastfeeding duration, as moderated by perceived norms, breastfeeding attitudes, and breastfeeding self-efficacy?

Significance of Study

The proposed research study addresses a significant need for more research that not only examines different ways to support breastfeeding mothers, but also how these sources relate to breastfeeding outcomes (Renfrew et al., 2012). In addition, there is little research that contextualizes the experience of African American mothers who participate in social media support groups for breastfeeding, despite the prevalence of social media use by this population for social support (Johnson et al., 2015; Audelo, 2014). Furthermore, social norms significantly influence breastfeeding initiation and duration among African American mothers and several studies suggest that media images can influence breastfeeding norms (Johnson et al., 2015;

Reeves et al, 2015; Gross et al., 2015; Bai et al., 2011). The influence of positive media, specifically through social media, on breastfeeding norms, however, is lacking from the literature (Johnson et al., 2015). The evidence provided from this study could serve as the foundation for future interventions using social network sites to support breastfeeding mothers.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this chapter is to provide a literature review on the importance of support for breastfeeding mothers, the use of social media among mothers, and the use of social network sites (SNS) to provide breastfeeding support. This chapter provides justification for the use of social network sites to support African American breastfeeding mothers and establishes the need to further understand the experiences and associated breastfeeding outcomes for mothers participating in SNS breastfeeding support groups. Furthermore, this chapter proposes a framework for examining SNS use for breastfeeding support and correlations with breastfeeding outcomes.

Social Support

The construct of social support includes the functional aspects of support, such as perceived support and actual support received (Montano, 2015). Both received support and perceived support for breastfeeding predict breastfeeding success (Mitra, Khoury, Hinton, & Carothers, 2004). In addition, several typologies exist for classifying social support. House (1981) classifies support into four categories: emotional, informational, instrumental, and appraisal support. Emotional support includes empathy, trust, and concern. Informational support includes offering information, providing instructions, and advice. Instrumental, or tangible support, provides tangible and practical assistance and can include helping with tasks, providing monetary support, and devoting time. Appraisal support provides recipients with encouragement and affirmation through feedback (Grassley, 2010). Cutrona and Suhr (1992) identify the

following five dimensions of support, several of which overlap with the support categories described by House (1981): informational, emotional, esteem, tangible, and network. Esteem support shows regard for an individual's skill and abilities, as well as, intrinsic value. Network support provides structural connections with others, rather than emotional connections (Hether, Murphy, Valente, 2016).

National guidelines for supporting breastfeeding mothers provide strategies that can be used by health professionals and peers to operationalize the dimensions of social support. Early forms of breastfeeding support, for example, can include assistance with latching and positioning (instrumental or tangible support), addressing breastfeeding concerns, and providing counseling on transitioning back to work (emotional support and informational support) (CDC, 2013). These strategies are supported by systematic reviews examining the social support needs of breastfeeding mothers and the effect of support on breastfeeding outcomes (McCormick et al, 2012).

Sources of breastfeeding support, in addition, to the types of social support received may also be important for breastfeeding mothers. For women, decision-making, including the decision to breastfeed, is highly influenced by social networks and the most preferred source of child rearing information is other mothers (CDC, 2013). For mothers, especially among groups with low breastfeeding rates and mothers who lack social support within their immediate social networks, the support from peers is essential to overcoming barriers to breastfeeding within a women's social network (Allen, Ruowei, Scanlon, Perinne, & Chen, 2013). Dennis, Hodnett, Gallop, and Chalmers (2002) define peer support as support that incorporates informational, appraisal, and emotional assistance and is delivered by volunteers outside of the recipient's immediate social network or family. Peer support is delivered by individuals who share similar

characteristics with the recipient, such as age or cultural background, or experiential knowledge of the target behavior (Dennis et al., 2002). Several studies provide evidence for the effectiveness of peers in delivering breastfeeding support for African American mothers (Dennis, et al. 2002; Renfrew et al., 2012). In addition, African American mothers may also experience less breastfeeding counseling and support from healthcare providers, which further underscores the importance of having peers to encourage breastfeeding (Johnson et al., 2015).

Internet-based Support Groups

Studies have found that online support groups, utilizing discussion boards and online health information, successfully aid in coping and buffering stress among people living with HIV, cancer, and among individuals aiming to achieve weight loss (Gray, 2013). In addition, the results of a review of social media use for chronic disease management revealed that online social support groups were the most common chronic disease interventions implemented through the internet (Merolli, Gray, & Martin-Sanchez, 2013). Among the 19 studies included in the systematic review, internet-based support groups for chronic disease management were used to provide social support, including helping others, retrieving information or insight, exchanging experiences, and finding positive meaning (Merolli et al., 2013). The use of internet-based support and its association to social connectedness and social capital is also supported through earlier literature. In a study by Dunham, Hurshman, Litwin, Gusella, Ellsworth, and Dodd (1998), the researchers provided the mothers with a computer-mediated social support (CMSS) network concerned with parenting issues. The network operated 24 hours per day for six months. Among other findings, mothers who were more socially isolated from peers were more likely to engage in the group (Dunham et al., 1998). Kauppi & Rashmi, (2008) developed an internet-based social support program for adolescent mothers. Among the benefits reported by the

mothers who participated in the three-year demonstration project, called Cybermoms, were support, encouragement, and overcoming social isolation (Kauppi & Rashmi, 2008).

Two systematic reviews exploring internet-based and e-technology interventions for breastfeeding mothers highlight the dearth of literature in this area (Giglia & Binns, 2014; Lau et al., 2016). Giglia and Binns (2014) assessed the effectiveness of online breastfeeding interventions on breastfeeding outcomes. Only one study met the inclusion criteria for this systematic review. The quasi-experimental intervention included in the review was an internet-based intervention conducted in Taiwan, in which 65 women received access to an online breastfeeding educational program prenatally. The results of this study identified a significant effect of the intervention on exclusive breastfeeding. Exclusive breastfeeding was significantly higher in the intervention group through six weeks post-partum (Giglia & Binns, 2014). A meta-analysis conducted by Lau et al. (2016) found some effects on exclusive breastfeeding by mothers who participated in online breastfeeding interventions. Lau et al. (2016) examined a wide range of quasi-experimental and experimental e-technology interventions, including web-based, SMS text messaging, and CDC-rom based interventions (N = 16), conducted from 2007-2014, that offered breastfeeding information, consultation, and support to perinatal women. This study only included interventions delivered by health professionals. The results of the meta-analysis suggest that, in comparison to usual care for breastfeeding, web-based interventions significantly improved exclusive breastfeeding initiation, exclusive breastfeeding duration, breastfeeding attitudes, and breastfeeding knowledge (Lau et al., 2016). Text message and CD-ROM based interventions in this study showed varying significant improvements related to study outcomes. Of note, the interventions included in the two reviews did not examine support

delivered by peers. In addition, there were no interventions specifically delivered through social network sites.

Social Network Sites and Social Support

Researchers have examined the use of social network sites to provide social support as well (Capurro et al., 2014; Meng et al., 2017; Merolli et al., 2013; Zhang, Campo, Yang, Janz, Snetselaar, & Eckler, 2015; Cavallo Tate, Ries, Brown, Devellis, & Ammerman, 2012). Two studies examining peer support for physical activity delivered on Facebook showed different results (Zhang et al., 2015; Cavallo et al., 2012). A cross-sectional study examined the effects of peer support delivered on Facebook on intentions to participate in leisure time physical activity (Zhang et al., 2015). The researchers who conducted this study applied the Theory of Planned Behavior (TPB) to explore the effects of social support delivered on SNSs about leisure time physical activity on college students' intentions to participate in leisure time physical activity (N = 439). Consistent with the Theory of Planned Behavior, attitude, subjective norm, and perceived controlled were measured as joint predictors of behavioral intention (Zhang et. al., 2015). Data was collected through an online survey from a sample of undergraduate students who reported use of social network sites. The researchers compared the effect of perceived social support on leisure time physical activity through three causal pathways, which measured: the total effect of support on physical activity (both direct and indirect), direct effect of support on physical activity, and the indirect effect of social support on physical activity through the TPB mediators. The results of this study suggest that peer support delivered on Facebook indirectly influenced intentions to perform leisure time physical activity, as mediated by perceived behavioral control and attitudes (Zhang et al, 2015).

Cavollo et al., (2012) conducted a randomized controlled trial, in which intervention participants received access to a Facebook peer support group, in addition to, an educational website with tools for self-monitoring. The control group received access to a limited version of the educational website and was also sent informational articles, via email, that were posted in the Facebook group. The results of this study did not detect significant differences in increased physical activity and perceived social support. Intervention participants did, however, report high levels of satisfaction with the Facebook component of the intervention. Cavollo et al. (2012) hypothesized that the failure to detect significant levels of perceived social support among the intervention group may be due to the low amounts of social support provided within the Facebook group in this study.

Though support received through social network sites, like Facebook, has been extensively studied more broadly, studies specifically examining SNSs to provide peer support for breastfeeding mothers are limited (Meng et al., 2017). Empirical evidence on the mechanism by which online peer support relates to how long a mother plans to breastfeed and breastfeeding duration are also limited (Audelo, 2014; Wolynn, 2012). Considering that social support from peers, family, and community members is important for successful adjustment to parenthood and is a well-known correlate for breastfeeding, social network sites, like Facebook, may be a source of building social capital for new parents (Bartholomew, Schoppe-Sullivan, Glassman, Kamp Dush, & Sullivan, 2012). Social capital refers to the resources one has available through relationships with others and includes bonding capital, which one has available through strong tie networks, as well as, bridging capital, which is available through weak tie networks (Bartholomew et al, 2012). While strong tie networks exist among individuals who share long histories and are characterized by high degrees of trusts and social support, weak tie networks are

characterized by new perspectives and useful information, especially concerning a specific topic. Both bonding and bridging capital exist on social network sites, through which an extended network of social support is accessible (Bartholomew et al, 2012).

Prevalence of and Patterns of Social Media Use Among Mothers

The current literature underscores the popularity of social media among mothers. According to a study conducted by the Pew Research Institute, 83% of parents who use the internet also report using social media (Duggan, Lenhart, Lampe, & Ellison, 2015). Like non-parents, the most popular social media site among parents is Facebook (Duggan et al, 2015). Mothers, in comparison to fathers, are more likely to use Facebook and are also more likely to check Facebook several times a day. Younger mothers, defined by the Pew Research Center as mothers under the age of 40 years old, are more likely to use Facebook and younger parents are more likely to check Facebook daily. Amongst other uses, mothers use social media to give and receive social support (Duggan et al., 2015).

Though the study conducted by Pew Research Center did not examine the demographics of survey participants outside of age, several other studies highlight the diverse demographics of mothers who use social media, including adolescents, minorities, and low-income mothers (Asiodu et al., 2015; Nolan, Hendricks, & Towell, 2015; Logsdon, Bennett, Crutzen, 2014; Mitchell, Godoy, Shabazz, & Horn, 2014). Of note, only one study identified in the literature examined social media use specifically among breastfeeding African American mothers. Asiodu et al. (2015) conducted a critical ethnography, using Black Feminist Theory, with 14 first-time African American mothers and their support persons. The purpose of this study was to describe social media use during the antepartum and postpartum periods among this population (Asiodu et al., 2015). Another study conducted with African American parents, used a cross-sectional

survey to examine the utilization of mobile and internet technology among (Bridges, 2016) parents with children, ages one through 12 years old (N = 302) and assessed their interest in receiving health information through text messages, social media, and the internet (Mitchell et al., 2014). Participants in both studies reported Facebook as the most commonly used social media site (Asiodu et al., 2015; Mitchell et al., 2014). In the study conducted by Mitchell et al., (2014), 78.8% of parents reported using Facebook and nearly half accessed social media sites daily. The majority of parents were also interested in joining a social network group about a topic concerning their child and receiving health information through mobile phones. The results of logistic regression revealed little differences in social networking activity based on education and income levels (Mitchell et al., 2014).

Several other studies, measured the frequency of social media use among mothers (Bartholomew et al, 2012; Logsdon et al., 2014). Though the population of African American mothers were limited in these studies, similar results were found regarding patterns of social media use. Bartholomew et al. (2012) examined the use of Facebook among new parents and participants (N = 182 couples). Participants in this study, completed a questionnaire at nine months postpartum measuring Facebook and Myspace use across their transition into parenthood, in addition to, their adjustment to parenthood. Similar to other studies, the majority of mothers and fathers reported using Facebook. In addition, parents reported increased Facebook use following the birth of their child. Logsdon et al. (2014) surveyed adolescent mothers (N = 185) in Australia during their first-year post-partum to examine patterns of social media use and the use of social media to obtain health information. Mothers in this study spent an average of six hours online per week and nearly 78% reported accessing the internet several times per day. Eighty-three percent of the mothers reported use of a social networking profile.

The results of this study are limited, however, by large confidence intervals, due to the small sample size in each category.

Considering the patterns of internet use among mothers, social network sites provide an opportunity to expand the social networks of breastfeeding mothers, increasing social support and making information more easily accessible. The results of these studies provide evidence for the use of Facebook for communicating health information among mothers, including African American breastfeeding mothers. These studies also demonstrate the relevance of Facebook among mothers across various time points in parenthood, spanning the antepartum period through early adolescence, which is useful in justifying the use of Facebook for mothers throughout the duration of their breastfeeding journey (Asiodu et al., 2015; Bartholomew et al., 2012; Mitchell et al., 2014). Furthermore, the interactive and collaborative features of SNSs, like Facebook, is well suited for the promotion of health activities, like breastfeeding (Bridges, 2016).

Reasons for Using Social Media Among Mothers – the Emergence of Social Support

Across studies examining the use of social media among mothers, social media was used by mothers to provide and receive peer support (Asiodu et al., 2015, Niela-Vilen, Axelin, Melender, & Salantera, 2015; Bridges, 2016; Holtz, 2016), for coping (Mitchell et. al., 2016; Lodgson et al., 2014), to alleviate isolation and create social connectedness (Asiodu et al., 2015; Nolan et al., 2015), create social capital (Bartholomew et al. 2012), increase parenting self-efficacy, reduce parental stress, and enhance access to information (Asiodu et al., 2015; Bridges, 2016; Holtz, 2016). Studies exploring social support through social media focused on blogs and various online forums for mothers. Few studies examined the use of Facebook to provide and receive support among mothers.

Facebook has the largest audience of any platform worldwide, with 71% of users describing themselves as parents (McCann, 2012). Facebook may serve an important function in the acquisition of social capital and social support resources, which are beneficial at the transition to parenthood, according to theory (Belsky, 1984). Online support groups through Facebook may also be a more convenient and preferred source for accessing information and support, in comparison to other online platforms (Bridges, 2016; Asiodu, 2016; Niela-Vilen, et al., 2016).

Among the few studies examining social support groups on SNSs specifically for breastfeeding, the studies were exploratory and outcome variables were not included in these studies. Two studies, conducted outside of the United States, provide insight on how mothers use Facebook for breastfeeding support (Bridges, 2016; Niela-Vilen et al., 2016). Bridges (2016) conducted a netnography (online ethnography) to explore how breastfeeding mothers experienced support within three closed breastfeeding support Facebook groups associated with the Australian Breastfeeding Association. In addition to conducting observations of the Facebook groups, the researchers conducted online in-depth interviews (n = 3) and online focus groups (n = 17) with the administrators of three pages and group participants, respectively. Demographic information from the study participants was not collected and the posts from the Facebook groups were not analyzed. Inductive thematic analysis of the interview and focus groups responses revealed an overarching theme of support. Four sub-themes described the nature of support experienced by participants in the Facebook groups and included community, complementary, immediate, and information. The immediate access of information from other mothers to meet unmet informational needs and to build skills for breastfeeding was found across all studies, in which participants used Facebook for breastfeeding support (Asiodu et al., 2015,

Bridges, 2016; Niela-Vilen et al., 2016). Similarly, a study with Finland mothers of preterm infants found that mothers often received inadequate support for breastfeeding from the nurses while in the hospital postpartum. Mothers in this study were provided access to a Facebook peer support group. A total of 22 mothers participated in the peer support group. Postings created from June 2011 through February 2013 (N = 305) were analyzed using inductive thematic analysis. Mothers described feeling inadequately prepared for breastfeeding once they returned home from the hospital and used the peers in the Facebook group to obtain needed information and support (Niela-Vilen et al., 2016). African American breastfeeding mothers in other studies also discussed their use of social media gain support, in addition to, overcoming social isolation (Asiodu et al, 2017). In a mixed-methods study conducted with first-time African American mothers enrolled in WIC (N=17), participants perceived a lack of support from places like hospitals, workplaces, and schools, but reported gaining breastfeeding support from social media, smart phone applications, and websites (Kim et al., 2017). African American mothers in another study reported social media platforms as the preferred mechanism for obtaining important information during the antepartum and postpartum periods (Asiodu et al, 2015). In the study conducted by Asiodu et al., 2015, mothers who were exclusively breastfeeding described Facebook as invaluable in providing support, which is also reflected in literature review findings on internet-based support for breastfeeding. The significant association with exclusive breastfeeding and online support is an important finding considering that African American mothers in the U.S. fall below the recommendations to exclusively breastfeed for six months. While the above studies demonstrate a positive association between social network sites and social support, in another study, social network sites were not significantly associated with perceived social support among mothers. One hundred and fifty first-time mothers with children

less than 18 months participated in an online survey to measure media use and multiple variables measuring maternal well-being. Contrary to the author's hypothesis, blogging and not the use of social network sites like Facebook, predicted feelings of connectedness, which in turn predicted perceived social support. These findings could reflect the study design, which did not specifically examine the use of social media and blogs to receive social support. This study instead examined general social media use in everyday life among first time mothers and its relation to social support, feelings of connectedness, parenting stress, and marital satisfaction, amongst other variables (McDaniel, Coyne, & Holmes, 2012). Measures of perceived support did not reflect support received specifically from social media.

Dimensions of Social Support Requested and Received Online by Mothers

Studies examining the specific dimensions of social support present in social media groups for mothers typically categorized the dimensions of support found on these platforms according to the dimensions described by House (1981) or Cutrona and Suhr (1992). Researchers also used similar methods in analyzing the type of social support found on social support sites, most commonly conducting qualitative content analysis.

One study conducted a qualitative and quantitative content analysis of breastfeeding blogs to determine the extent to which blogs were used to support breastfeeding behaviors (West, Hall, Hanson, Thackeray, Barnes, Nueger, & McIntyre, 2011). The Integrated Behavioral Model and was used to identify and constructs reflective of behavioral support. The researchers of this study analyzed blog level measures, as well as, posts and comments measures. In this study, breastfeeding mothers and mothers generally seeking social support received peer-to-peer support from other mothers (West et al., 2011). Using Cutrona and Suhrs (1992) dimensions of social support, Hether et al. (2016) conducted a content analysis of two pregnancy forums in

order to identify the dimensions of social support most commonly exchanged on health-related social networking sites. Gray (2013) also applied Cutrona and Suhrs (1992) dimension of social support to study online breastfeeding forums. In this study, a mixed-methods content analysis was conducted on the most popular online discussion boards for breastfeeding mothers. A randomly selected sample of posts from 2005 to 2011 were included in the analysis. Finally, Cowie, Hill, and Robinson (2011) conducted a content analysis to quantify the main issues discussed in an electronic discussion board hosted by the Australian Breastfeeding Association. The discussion forum provided peer to peer support for breastfeeding mothers. Data collection took place over a three-day period. All posts within this time frame were included in this study. Across these studies, mothers most often requested and received informational support and emotional support for breastfeeding, as well as, other parental issues (West et al., 2011; Gray, 2013; Hether et al., 2016; Cowie et al., 2011). Though emotional support was the most commonly requested type of support along with informational support, Gray's (2013) analysis of breastfeeding blogs found that posts offered tangible support (8%) slightly more than emotional support (7%) (Gray, 2013). Tangible/Instrumental support was only reported in this study, however. The remaining types of support, network and appraisal were requested and received to a lesser extent (West et al., 2011; Gray, 2013; Hether at el., 2016). Demographic information of mothers included in these studies was not included but would improve current knowledge on how various demographics of mothers' experience support within these platforms.

The benefits of support received through social network sites may be related to the exchange of new information primarily through weak tie networks. Weak tie networks, as described earlier, are beneficial because they provide individuals with access to new information, which may not be available in-network (Hether et al., 2016) An exploratory study conducted by

Hether et al. (2016) examined the dimensions of social support exchanged on two pregnancy forums through content analysis. Through network analysis, this study also examined how network structure varied by each dimension of support exchanged within the forums. The social networks created within this study were identified as weak tie networks, primarily consisting of a one-time exchange of support between two members. The network analysis also revealed that significantly more messages between weak tie networks contained informational support in comparison to other dimensions of social support (Hether et al., 2016). Based on the content analysis of the two sites included in this study, the support needs of forum participants were generally met, with most requests for support receiving responses from other forum members. In cases where informational support needs were not met, participants offered emotional support in exchange. This finding is also reflected in other studies examining health information seeking on social networking sites, in which researchers found a positive correlation between health-related social support sought and perceived, suggesting that participants can effectively gather needed social support from social network sites (Oh, Lauckner, Boehmer, Fewins-Bliss, & Li, 2013).

Emerging Themes and Topics Discussed – Breastfeeding Support

Studies examining social media use among breastfeeding mothers revealed that mothers discussed a variety of issues online. Major themes or topics discussed include handling guilt or criticism for breastfeeding decisions, breastfeeding barriers and physical struggles such as latching, pain, and breastfeeding positions, medical or clinical questions (e.g. increasing milk supply, medications affecting breastfeeding), breastfeeding transitions (e.g. weaning and transitioning to solid foods), and infant growth and development (West et al., 2011; Gray, 2013; Asiodu et al, 2015; Cowie et al., 2011). Gray (2013) found that other less common topics of message posted on blog sites included pumping, breastfeeding and nutrition, combination

feeding, and physical changes with breastfeeding. On the other hand, Cowie et al. (2015) found that mothers utilizing the Australian Breastfeeding Association's (ABA) breastfeeding discussion board more frequently discussed general parenting topics than breastfeeding topics. Mothers using this forum also discussed topics unrelated to parenting and more generally related to social support. Forty-seven percent of the posts in this study, in which content was analyzed over a three-day period, was related to general parenting issues such as household management, children, and discipline. The authors noted that these unexpected findings could be due to the fact that the breastfeeding discussion board is a part of a larger website by ABA, which provides an abundance of breastfeeding information for mothers (Cowie et al., 2015).

Affordances and Constraints of Internet and Social Media Use for Breastfeeding Support

Access and availability to the internet is one concern for promoting health interventions online. Approximately forty percent of African Americans and Hispanics lack internet access. Internet access disparities also exist according to education and income level, with adults with higher levels of education and income levels at increased odds of accessing the internet, in comparison to adults without a high school diploma and adults earning less than $20,000 per year. However, disparities according to race and socioeconomic status do not exist when examining the use of social network sites. An analysis of SNS use revealed higher frequency of SNS use among those with lower education and income and among Non-Hispanic Blacks and Hispanics, which supports the potential use of SNS to deliver health promotion interventions among underrepresented populations (Kontos, Emmons, Puleo, & Viswanath, 2010). In addition, the internet also offers low cost and timely information that mothers can access as needed through expanded social networks (Bridges, 2016). Online interventions through social network

sites may be used as standalone interventions or in combination with the delivery of face-to-face intervention components.

The use of the internet for delivering information and support is not without constraints, however. Concerns about privacy and confidentiality may influence participation in online groups and information seeking, especially regarding potentially sensitive topics (Logson et al., 2014). West (2012) suggested that mothers may feel more comfortable on larger online sites where their identity is unknown than on more personal sites where they could be identified by friends and family members. Adolescent mothers in one study also reported that confidentiality was very important in the use of social media for health seeking formation. Adequate privacy controls and the use of private/closed groups on social media are ways to protect the privacy of those participating in online health promotion interventions (Nolan et al, 2015; Bridges, 2016).

Another potential constraint is the accuracy of health information delivered online. The findings from several studies with adolescents and adult mothers suggest that both groups of mothers consider the creditability of online sites for breastfeeding information and support (Logsdon et al., 2014; Nolan et al., 2015). Information delivered by peers may be less accurate than information delivered by trained professionals. Studies examining the use of social network sites to provide peer-to-peer breastfeeding support, may also consider examining the accuracy of information provided.

Theoretical Frameworks

This dissertation was framed using the qualitative tradition, Black Feminist Thought, in addition to applying a model adapted from Fishbein's and Ajzen integrative model of behavior prediction (IMBP) (Montano, 2015). The use of the adapted behavioral prediction model (IMBP) was applied to the analysis of attitudes, norms, and self-efficacy within the quantitative methods

for this study and also considered when developing the focus group guide questions and codes during analysis. Applying this framework allowed the researcher to explore relationships between perceived SNS support for breastfeeding and intended breastfeeding duration, as moderated by commonly cited predictors of breastfeeding behaviors. As existing studies on social media and social network sites have used the theoretical constructs from this model to examine online content, this framework allows for associations to be made to behavioral outcomes. West (2011), for example, applied the constructs within this model to a quantitative and qualitative content analysis of a breastfeeding blog.

Integrative model of behavior prediction. The integrated model of behavior prediction integrates the Theory of Planned Behavior (TPB) , the Theory of Reasoned Action (TRA) and draws constructs from other theories, such as social cognitive theory (Montano, 2015). Similar to TPB and TRA, a basic premise of IMBP is that intention is the strongest determinant of behavior. Breastfeeding intention, or intended breastfeeding duration, is significantly related to actual breastfeeding duration and may be modified by a mother's early postpartum experiences (Swanson & Power, 2005). In addition, according to the model, behavior is likely to occur if the following conditions are present: strong intentions to perform the behavior, necessary skills to perform the behavior, and the absence of environmental constraints to performing the behavior (Fishbein & Yzer, 2003). Within IMBP, an individual's intention to perform a behavior is determined by their attitudes toward the behavior, perceived norm, and personal agency (Montano & Kasprysk, 2015). The IMBP model further includes both experiential attitudes (an individual's emotional response to performing a behavior) and instrumental attitudes (beliefs about outcomes of performing the behavior). Research supports the use of this construct as a predictor of breastfeeding intentions and subsequent breastfeeding behaviors (De La Mora &

Russell, 1999; Jefferson, 2014; Persad & Mensinger, 2008). Within this study, breastfeeding attitudes are defined as the degree of positive or negative value placed on breastfeeding.

In measuring norms, Montano (2015) notes that subjective norms, as measured in TPB and TRA, may not completely capture the normative influence experienced among some populations. Subjective norms are social and moral pressures to perform a behavior (motivation to comply) formed by the extent to which individuals perceive that influential others expect them to perform a certain behavior (injunctive norms) (Swanson & Power, 2005). Unlike TPB and TRA, the perceived norms construct within IMBP includes both injunctive and descriptive norms. Perceived norm is described as the perceived social pressure to perform or not to perform a behavior, and it is composed of both injunctive norms and descriptive norms (Ismail, Mudam & Bakar, 2016). Injunctive norms are determined by an individual's normative beliefs (whether influential persons approve or disapprove of a behavior) (Montano & Kasprysk, 2015; Ismail, et al, 2016). Descriptive norms, on the other hand, described the perceived prevalence of a behavior (Swanson & Power, 2005).

Descriptive norms, which capture the strong cultural ties among certain populations, may also serve as an important component in normative influence. In breastfeeding behaviors among African American mothers, for example, norms surrounding breastfeeding result from opinions of close family members and the mother's partner, but also reflect larger cultural norms that suggest formula feeding is just as healthy or superior to breastfeeding (Kim et al., 2017; Reeves & Woods-Giscombe, 2015). Broader cultural norms surrounding breastfeeding may also reflect internalized views of the media depictions of breasts as solely sexual versus functional body parts for infant nutrition (Bentley, Dee, & Jenson 2003). Therefore, within the behavioral model

for this study, the researcher defined perceived norms as "Perceived social pressure to breastfeed or not to breastfeed and perceived prevalence of breastfeeding."

The final construct category within the IMBP, personal agency, includes self-efficacy and perceived control (one's perception of the degree to which certain factors make it easy versus difficult to complete the behavior). Self-efficacy may be a stronger predictor of breastfeeding than perceived behavioral control (Dennis et al., 2002; Johnson et al., 2015; Meedya et al, 2010; Reeves, & Woods-Giscombe, 2015). Perceived behavioral control is also operationalized as self-efficacy across breastfeeding literature (Swanson & Power, 2005). The importance of breastfeeding self-efficacy is not a determinant unique to African American mothers. However, improving low self-efficacy in this population is critical because of lower breastfeeding rates, higher risk for early breastfeeding cessation, and greater perceptions of breastfeeding barriers (Meedya et. al, 2010). Within this study, breastfeeding self-efficacy is defined as "A mother's belief that she will be able to organize and carry out the actions necessary to breastfeed her infant", as defined by McCarter-Spaulding & Gore (2012, p.112).

The relative influence of the aforementioned variables on behavioral intentions and behaviors varies depending upon the behavior and population. Finally, within the IMBP model, factors like media and intervention exposure are categorized as distal variables that indirectly influence behavior (Montano & Kaspryzk, 2012). Support received through the Facebook support group and other sources of support therefore serve as distal factors that indirectly influence breastfeeding intentions. Breastfeeding support, of which the importance for breastfeeding mothers is detailed in other chapters, is defined in this study as "the availability of information and assistance for breastfeeding." The resulting outcome of breastfeeding intentions is defined in this study as "The number of months or weeks that a mother intends to provide any

breastmilk to her child." Table 2.1 provides the definitions for the constructs and other relevant terms in this study.

Table 2.1. *Study Definitions*

Construct Name	*Definition*
Breastfeeding Support (Facebook group, Other Sources of Support)	Availability of information and assistance for breastfeeding
Informational Support	Offering information, providing instructions, and advice
Esteem Support	Shows regard for an individual's skill and abilities, as well as, intrinsic value
Emotional Support	Showing empathy, trust, and concern
Appraisal Support	Providing encouragement and affirmation through feedback
Instrumental Support	Providing tangible and practical assistance (e.g. helping with tasks, providing monetary support, and devoting time)
Network Support	Attempts to make connections with others in the group (Hether, 2016)
Breastfeeding Self-Efficacy	A mother's belief that she will be able to organize and carry out the actions necessary to breastfeed her infant
Breastfeeding Attitudes	The degree of positive or negative value placed on breastfeeding
Perceived Breastfeeding Norms	Perceived social pressure to breastfeed or not to breastfeed and perceived prevalence of breastfeeding (composed of both injunctive norms and descriptive norms)
Breastfeeding duration (intended duration)	The number of months or weeks that a mother intends to provide any breast milk to her child
Breastfeeding	The receipt by the infant of any breastmilk within the past 24 hours
Exclusive Breastfeeding	Breastfeeding without the use of human milk substitutes or solid foods
Mixed Feeding	Breastfeeding and use of human milk substitutes or solid foods

The following conceptual model depicts the relationship between the constructs and study outcomes.

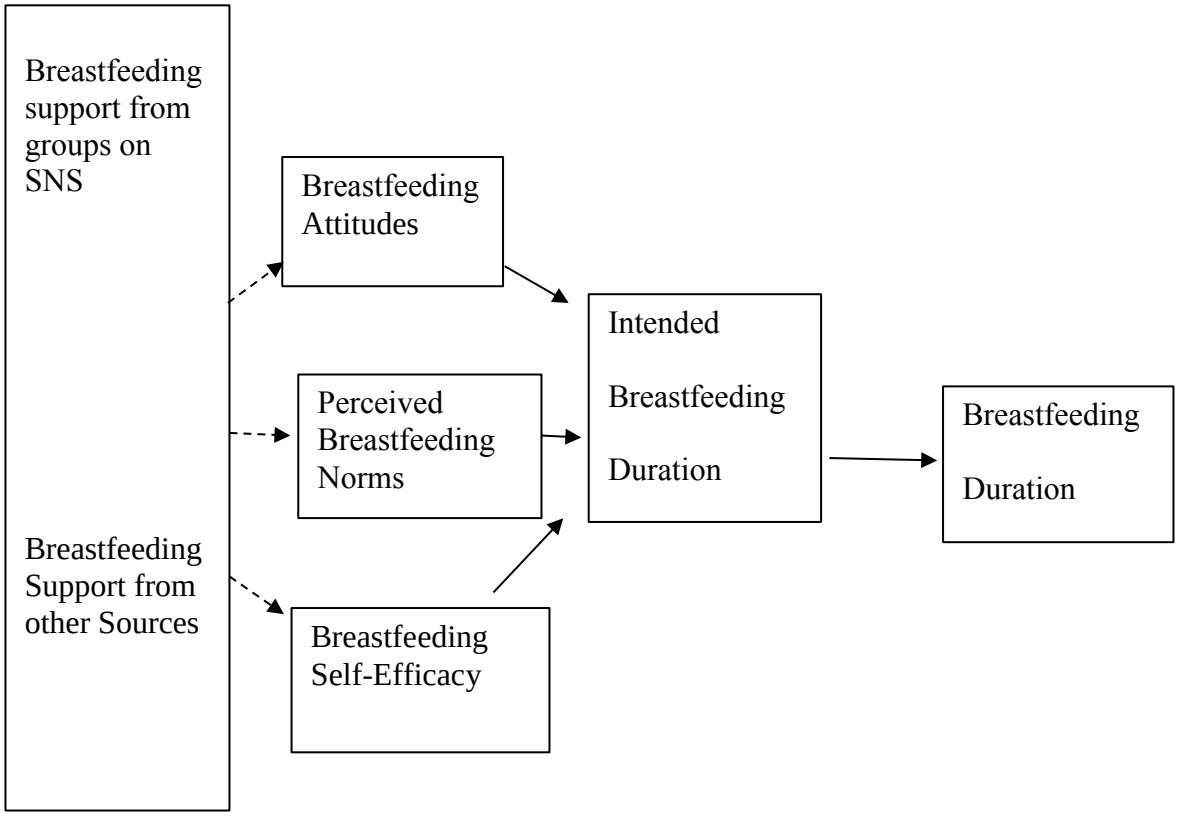

Figure 1. Conceptual model describing the relationship between online support and breastfeeding intentions and duration.

Black Feminist Thought

Researchers have applied Black Feminist thought to several studies examining the breastfeeding experience of African American mothers and several breastfeeding scholars call for the continued use of this framework in breastfeeding studies targeting African American mothers (Asiodu et al., 2015; Spencer, Wambach, & Domain, 2015). This qualitative tradition provides an ideal framework for this study.

Bridging the Black feminist movement into the scholarship of qualitative researchers, Black Feminist Theory emerged as critical social theory aimed at empowering African American

women and furthering social justice for Black women in the U.S. and for other similarly oppressed groups (Collins, 2000). According to Collins, Black Feminist thought, also referred to as Black Feminist theory, involves reclaiming Black women's subjugated knowledge and acknowledges that Black women have independent and oppositional knowledge concerning their own subordination (Collins, 2000).

Collins (2000) highlights three unique interdependent dimensions of oppression of Black women that are shaped by the intersections of race, class, and gender. The three dimensions are briefly described in this section to provide further context for the work of Black feminist scholars and to further describe the ways in which these systems of oppression are addressed within Black feminist research. The first dimension of oppression represents the economic oppression of Black women formed through the exploitation of Black women's labor in the U.S. The second dimension, the political dimension of oppression, has historically denied African American women the rights and privileges regularly extended to White male citizens, such as the right to vote and denying literacy. The third dimension, most relevant to this research study, involves an ideological oppression imposed by controlling of images applied to Black women (Collins, 2000). Although negative representations of African American women have origins in slavery and were used to justify the oppression and abuse of enslaved African women, stereotypical images such as the mammy, the jezebel, and the welfare queen are pervasive today and used to still justify the oppression of African American women (Collins, 2002; Bentley et al., 2003). The multidimensional oppressions experienced by African American women shaped the relationships of African Americans in society, at the macro and micro level. These factors provide context for the work of African American scholars (Collins, 2000).

Epistemology is concerned with the production of knowledge that has universal application (Prasad, 2015). The epistemology of Black Feminist Theory involves assessing truths that are widely accepted among African American women (Collins, 2000). These truths are based on collective experience and worldviews, sustained based on the particular history of Black women within American society (Collins, 2000). There are four dimensions of Black Feminist epistemology articulated by Patricia Hill Collins. The first involves the lived experience of African American women as a criterion of meaning and credibility. The second dimension of the epistemology of Black feminist theory involves the use of dialogue and connectedness in assessing knowledge claims. The third dimension, the ethics of caring, posits, "personal expressiveness, emotions, and empathy are central to the knowledge validation process" (Collins, 2000, p. 263). In brief, the ethics of care includes three interrelated components: emphasis on individual uniqueness, the appropriateness of emotions in dialogue, and developing the capacity for empathy. The final dimension of Black Feminist thought's epistemology is personal accountability. Within this dimension, accountability for knowledge claims, in addition to, the development of knowledge through dialogue and the presentation of knowledge in a way that proves concern for the proposed ideas, is important to the validation process. Within the epistemology of Black Feminist thought, African American women create knowledge that fosters their empowerment and social justice (Collins, 2000).

A review of literature concerning Black Feminist thought further identities five core components of this qualitative tradition (Collins, 2000; Spencer et al., 2015; Alinia, 2015). First, there is inherent value in African American women's experiences (Spencer et al., 2015). Despite the internal differences and divisions among African American women as a heterogeneous population, there still exists a collective identity and consciousness based on the shared

experience of African American women as a marginalized group within this society (Collins, 2002). The expression of African American women's lived experiences, using their own words to voice their collective experience is important to countering and reclaiming knowledge. In Black feminist research, Black women's unique realities are central to the validation of research. The aim is also to empower African American women and stimulate resistance (Collins, 2002). Secondly, African American women have a history of struggle against oppression. As described by Alinia (2015), the collective identity of Black women in America is formed by the "dialectic of oppression and resistance" (p. 235). Third, African American women experience oppressions at the intersections of race, class, and gender. Described as the matrix of domination, race, gender, and class frame the struggles within the experience of African American women (Alinia, 2015). A distinctive part of this framework is the focus on resistance, activism, and the empowerment of African American women (Alinia, 2015). As such, a fourth component of Black Feminist Thought is that African American women resist oppression through activism within their community. Finally, Collins highlights that sexual politics and stereotypes have an impact on African American women's lived experiences (Spencer et al., 2015). Within Black Feminist thought, Black women speak to their own experiences creating images that can resist the defined imagery in society.

Using Black Feminist thought as the theoretical framework for this study, allowed the researcher to present the unique perspective of African American women in a way that focused on their experiences as the criteria of meaning. Black Feminist thought, furthermore, provided a framework for exploring the intersections of race, class, and gender within the breastfeeding experiences of Black women and how they are reflected in their experiences within the online support groups. The socio-cultural and historical factors within African American communities'

influence breastfeeding norms, such as the sexual objectification of the female body and stereotypical narratives, as well as, the use of African American women as wet nurses (Watson, Robinson, Dispenza, & Nazari, 2012; Johnson et al., 2015). Researchers suggest that these factors led to the disapproval of breastfeeding passed through generations of African Americans (Johnson et al., 2015).

In addition, representation of stereotypical narratives of Black women through the media reinforce the notion of Black women as other, less than the standard, and hypersexual in ways that are internalized and perpetuated in health behavior decisions. For example, in one study, focus group participants believed that negative images of sexuality associated with Black women's bodies conflicts with the idea of breastfeeding as nurturing and health promoting (Spencer et al., Wambach et al., 2014). In another study, a participant spoke to her disapproval of breastfeeding founded in representations of the breasts as solely sexual rather than functional body parts used for infant nutrition. This participant stated, "The breasts (are) more or less like a sexual component. It's there to turn on the male sex. And for the baby to be attracted to that part of the body, is in my mind, it's like a turn off, do you need this loving?" (Bentley et al., 2003, p. 308). In exploring the experiences of African American mothers who participate in SNS breastfeeding support groups, the theory was used to highlight aspects of Black Feminist Theory, like social activism and counter-narratives, when found within the dialogue of study participants.

Gaps in the Literature

In summary, the current literature examining the use of online support by mothers suggests that online social support, particularly through forums and social network sites, may provide social support needed for mothers, both in terms of general parenting support and also for specific aspects of motherhood, such as breastfeeding. The results of the studies in this

chapter indicate that a diverse population of mothers are interested in online social support networks. The literature also suggests that the most common dimensions of social support requested and received online are informational and emotional support. This has promising implications for internet-based support groups, which through weak tie networks, largely offer informational support (Hether et al., 2016). In addition to providing social support for mothers, breastfeeding and otherwise, social network sites and other online forums alleviated social isolation and expanded social networks for mothers. It is therefore possible that online social groups are a mechanism for increasing social support among behaviors that are not established as the norm within an individual's social network (West et al., 2011).

As discussed, there are limited studies, however, that focus on breastfeeding support delivered through Facebook, though there were several studies that examined breastfeeding support through blogs and online forums. The popularity of Facebook across different demographics of mothers warrants further research on its use to provide breastfeeding support. In addition, though findings suggest that the use of blogs for social support among mothers was positively associated with study outcomes, this form of social media may be less popular among low-income mothers and African American mothers, as suggested by the findings in the literature (Mitchell et al, 2014; Swindle, Ward, Whiteside-Mansell, Bokony, & Pettit, 2014). The use of social media platforms or social network sites vary depending on demographics and should be considered in future research for breastfeeding support or interventions using social media.

Based on the current literature, it is also unclear if online-based support is used in conjunction with other sources of support or if it can provide the main source of breastfeeding support. Research that examines the use of online based support for breastfeeding mothers in

comparison to their other sources of support for breastfeeding will provide a better understanding of the use of online support and associated outcomes. Similarly, largely missing from studies examining the dimensions of support provided online is the experience of mothers. In addition, limited studies seek to understand the mother's perception of the support received on these sites and how it relates to behavioral outcomes. Research that includes more information from the users of these sites should be included in future studies, especially studies with African American mothers, as the group with lowest breastfeeding rates, in comparison to other races in the U.S. In addition, socio-cultural factors that influence breastfeeding rates among African American mothers suggest that this group may benefit from online groups created to address cultural nuances.

Online support groups for breastfeeding, especially on social media sites, frequently post pictures of breastfeeding mothers who participate in the online community. Research studies show the influence of media images on breastfeeding norms (Johnson et al., 2015). The influence of positive media, specifically through social media and social network sites, on breastfeeding norms, however, is lacking from the literature (Johnson et al., 2015). Future research studies may therefore consider examining the influence of breastfeeding images posted on online support sites within the studies of these pages. There were no studies identified that analyzed or considered the images posted on the online breastfeeding support pages.

Chapter Summary

Findings across multiple studies underscore the importance of social support for achieving breastfeeding goals. The use of social network sites may extend social support networks for breastfeeding mothers, provide multiple types of social support, and also increase breastfeeding self-efficacy. Through increased exposure to breastfeeding and expanded networks

of support, support groups on social networking sites may also positively influence breastfeeding attitudes and create shifts in norms associated with breastfeeding. As the popularity of social network sites continues to grow, including its use among mothers for social support, it is important for health educators and other health professionals to adopt these methods for delivering public health interventions and disseminating information (Wolynn, 2012).

CHAPTER 3

RESEARCH DESIGN

The purpose of this chapter is to explain the mixed-methods design that guided this dissertation. Both quantitative and qualitative methodologies were utilized for this study. The findings from each source were integrated to answer the research questions. The justification for using mixed-methods and an overview of each data source is also provided.

Purpose of this Study and Research Questions

This study expands on the existing body of literature examining social network sites (SNS), specifically Facebook, used to provide social support for mothers (Holtz et al., 2015; Bridges, 2016). Researchers can use the findings from this study to develop social media and other online interventions designed to support African American breastfeeding mothers.

The following research questions guided this study:

RQ1: What is the experience of African American mothers who participate in breastfeeding support groups on social network sites?

RQ2: What are the types and sources of breastfeeding support received by African American breastfeeding mothers who participate in breastfeeding support groups on social network sites?

RQ3: In comparison to other sources of breastfeeding support, what is the relationship between breastfeeding support received from SNS support groups and breastfeeding duration, as moderated by perceived norms, breastfeeding attitudes, and breastfeeding self-efficacy?

Research Design

A mixed methods study was developed to answer the research questions. Mixed methods are not simply the collection of data using multiple methods. Mixed methods research expands beyond the use of adding qualitative data to a quantitative design, but requires specific scientific techniques and the collection, analysis, and integration of both quantitative and qualitative data, (Creswell, 2009). Creswell (2014) describes mixed methods as:

> "An approach to research in the social, behavioral, and health sciences in which the researcher gathers both quantitative and qualitative data, integrates the two, and then draws interpretations based on the combined strengths of both data sets to understand research problems". (p. 2)

There are three basic types of mixed methods designs described in the literature: convergent design, explanatory sequential design, and exploratory sequential design (Creswell, 2009; Snelson, 2016). This dissertation followed a sequential mixed-methods design, in which quantitative research was conducted during the first phase of data collection and qualitative data was collected during the second phase (Creswell, 2014). In studies exploring the use of social media, it is common to include multiple data sources such as social media users and social media pages (Snelson, 2016). Mixed methods social media studies frequently include data collected through interviews, focus groups, and surveys, in addition to, analyzing social media content. Similarly data for this dissertation was collected directly from the population that participates in breastfeeding support groups on Facebook and included extant data collected from a Facebook breastfeeding support group (Snelson, 2016).

Justification of Research Design

A common reason for conducting mixed-methods studies is to increase the generalizability of research (Hesse-Biber, 2010). For example, sampling a random population for a quantitative survey, followed by sampling a subset of those participants for qualitative data collection can extend the generalizability of the qualitative findings (Hesse-Biber, 2010). Mixed-methods studies are also used to advocate for social transformation and to increase the reliability and validity of research findings (Hesse-Biber, 2010). Due to the complexity of problems addressed in social and health science research, the use of qualitative or quantitative methods by themselves may not be inadequate (Creswell, 2009). However, the triangulation of data across multiple data points offsets the inherent bias from one form of data collection (Greene, Caracelli, & Graham, 1989).

Within this research study, quantitative research alone does not address the complex breastfeeding experiences of African American mothers and their experience with support. Quantitative research also does not bring forth the perspectives and voices of the women, which is a critical component in feminist studies. The qualitative research, therefore, was essential in centering the voices of women using the sites and allowed the researcher to further explore concepts, like experience, within the study. The use of quantitative data within this study, on the other hand, allowed the researcher to obtain measurements of SNS use and other variables to address the research questions, including psychosocial factors within the behavioral model and behavioral outcomes. Through the combination of inductive and deductive approaches used in collecting and analyzing the qualitative and quantitative data, a mixed methods design provided a comprehensive understanding, in comparison to using quantitative or qualitative methods alone. Figure 2 illustrates the sequential design guiding this study, in which quantitative and qualitative

methods received equal weight in the analysis. Data collected included a cross-sectional survey, focus groups, and the content of a breastfeeding support group. The results and findings from each source were integrated to answer the research questions.

Figure 2. A sequential mixed methods design for exploring the experience of African American breastfeeding mothers on a Facebook support group

Site Descriptions

Facebook was selected for several reasons as the social networking site to examine within this study. Foremost, Facebook remains the most popular social media site (Duggan, 2015). Furthermore, the ability for users to create public and private groups to discuss various topics affords the ability to examine support groups online. In order to maximize recruitment for this study, the researcher first searched Facebook for breastfeeding support groups for Black mothers, identifying nine potential groups to recruit participants from, with the number of group members ranging from 104 to 26,000. In addition, three other pages which promoted breastfeeding on Facebook and also Instagram were also selected as potential sites to promote the study. Each group supported the purpose of breastfeeding promotion and peer support among Black mothers. In total, participants were directly recruited by the principal investigator from six groups on Facebook, although the recruitment flyer was shared across other social media pages. Five of the groups were specifically dedicated to providing breastfeeding support to Black mothers and one

group provided peer support for Black mothers more broadly. Three of the five breastfeeding support groups targeted mothers in specific cities or states in the U.S. There were two groups representing mothers in a southern state and one group representing mothers in a mid-western state. The remaining two groups had national representation and included mothers from across the United States.

The largest support group identified and included in this study is a closed mom-to-mom breastfeeding support group designed to help further a culture of supportive norms for breastfeeding. According to the Facebook page for the group, the group offers breastfeeding support, evidence-based information, and encouragement, in addition to, providing a community to assist expectant and nursing mothers in meeting their breastfeeding goals. The page is administered by three mothers, two of whom are trained in providing lactation counseling services and moderated by two additional mothers. The breastfeeding support group had over 26,000 members when data collection began. As the largest and most active group, the content from this Facebook page, also served as the site for qualitative content analysis, in order to collect a robust sample of support exchanges.

Target Population

The target population for this dissertation was primiparae (first time), self-identifying African American breastfeeding mothers who use Facebook groups for breastfeeding support. Similar to other studies, breastfeeding within this study is defined as the receipt by the infant of any breastmilk within the past 24 hours (McCarter-Spaulding, 2012). In addition to being first-time African American mothers, eligible participants met the following criteria:

1. 18 years old or older
2. Currently breastfeeding

Including mothers across a range of breastfeeding time points allowed the principal investigator to examine the study's outcomes among newer mothers and mothers breastfeeding for a longer duration. It was hypothesized that mothers within the first three months postpartum would be most relevant for examining the relationship between the moderating variables and intended breastfeeding duration. In studies examining breastfeeding self-efficacy and attitudes, the psychosocial variables have shown the strongest predictive validity of breastfeeding outcomes within the first few months post-partum (Brockway, Benzies, & Hayden, 2017; de Jager, Broadbent, Fuller-Tyszkiewicz, & Skouteris, 2014). Limited studies examine breastfeeding self-efficacy in mothers beyond a few months postpartum, however (Brockway et al., 2017). At the same time, including women across various periods of breastfeeding allowed the researcher to observe the relationship between these variables and breastfeeding outcomes at later stages postpartum. Considering the diverse population represented within online Facebook groups, this study employed strict inclusion criteria for participation. A screener was included at the beginning of the survey to identify potential participants who met all of the inclusion criteria.

The focus groups included mothers across various stages postpartum as well, which provide a comprehensive understanding of the experience of mothers who participate in SNS breastfeeding support groups. Furthermore, including only first-time mothers in the study, minimized the confounder of prior breastfeeding experience while increasing the opportunity to understand the phenomena of online breastfeeding support as it occurs for a group of mothers who experience major barriers in achieving breastfeeding success, in comparison to mothers with previous breastfeeding experience.

Sampling and Recruitment

A convenience sampling strategy was used to recruit participants for the survey. Convenience sampling is an inexpensive way to recruit survey participants and increases the odds of obtaining a sufficient number of participants for the study (Black, 1999). However, one of the disadvantages of this sampling strategy is the increased probability that the population will be unrepresentative due to the nonrandom methods of selection (Black, 1999). This is one of the limitations of the study design.

Patton (2015) notes that mixed sampling is at the core of mixed methods research. To recruit focus group participants, a link was located at the end of the online survey with additional information about participating in the focus groups. To minimize threats to validity and increase generalizability, the researcher used stratified purposive, or mixed methods, sampling to identify a diverse group of mothers to participate in the online focus groups (Patton, 2015). Descriptive analysis across participant demographics and outcomes were determined to identify subgroups of interest. Characteristics that were considered to identify focus group participants included age, education, income, and length of time breastfeeding. Considering that the breastfeeding support groups represented mothers from across the United States, the researchers selected participants from diverse geographic locations.

Incentives

Potential participants for Phase 1 of this dissertation were entered to win one of forty gift cards for $10. Participation in this study was not required to be entered into the random drawing and recipients of the gift cards were randomly selected. All participants in phase 2 of this dissertation received a $20 gift card for their time.

Data Collection Methods

Phase 1: Quantitative Methodology. Quantitative research methods support the examination of relationships between variables. Such information can be explored using surveys. Cross-sectional surveys are frequently used to explore the prevalence of behaviors and psychosocial factors like attitudes and support. However, through statistical analysis, researchers can also use cross-sectional surveys to test hypotheses about mediators, moderators, and to test associations among variables. A quantitative survey was conducted with 277 participants and was designed to measure the constructs within the behavioral model for the study, sources and types of breastfeeding support, and use of the Facebook group.

Phase 2: Qualitative Methodology. While survey data is important for generating large amounts of data necessary for measuring quantifiable variables within this study, quantitative data does not provide insight into the unique experiences and stressors experienced by African American women (Asiodu, 2011). Qualitative traditions acknowledge that reality is socially constructed and experienced within the context of different parties (Hesse-Bieber, 2010). Furthermore, feminist perspectives, as a critical paradigm, aim to understand the lived experiences of women and other oppressed groups (Hesse-Bieber, 2010). The qualitative data in this study was therefore collected from focus groups and from the messages posted on one breastfeeding support groups on Facebook.

The primary aim of a focus group is to "describe and understand meanings and interpretations of a select group of people in order to gain an understanding of a specific issue from the perspective of the participants of the group." (Liamputtong, 2011, p.2). Within the focus groups, participants do not need to agree or disagree with other participants. Participants are provided with the space, however, to reflect on their views within the context of other

participants (Patton, 2015). In feminist research, focus groups help to ensure the voices of the participants are the center and criteria of meaning. When conducting research with historically marginalized populations, like women of color, focus groups may also balance power differences between the participants and the researcher, while also creating a space where participants can develop culture together (Johnson-Bailey, 2004; Patton, 2015). Focus group methodology was therefore an essential component in expanding information from the survey, such as the experiences of women who participate in the SNS site, advantages and disadvantages of online breastfeeding support, but also provided a mechanism for generating a collective view in the language of the participants (Cutrona & Suhr, 1992; Liamputtong, 2011; Madison, 2005; Ryan, Gandha, Culbertson, & Carlson, 2014). As described earlier, electronic data for the content analysis was collected directly from the one of the breastfeeding support groups on Facebook. The electronic data collected from the Facebook group provided additional insight into the types of social support sought and received by African American women who participate in this group by viewing the conversations as they occur naturally between the participants.

Qualitative researchers also acknowledge that researchers are not without preexisting biases that result from their own experiences. A level of researcher subjectivity is inherent and addressed within the following section.

Subjectivity Statement

My interest in nutrition and health, led to journey that includes a bachelor of science in Biology, considerations for becoming a registered dietitian, and finally to public health, where I believed I could impact health on a population level. Through motherhood, my interest in nutrition organically shifted to include maternal and child health and nutrition. I knew before my daughter was born that I would breastfeed, having learned some of the benefits beforehand.

However, it was not until motherhood that I learned of the immense importance of breastfeeding, including the short and long-term benefits it provided for mothers and their babies. As I learned more about the importance of breastfeeding, I also learned that breastfeeding disparities exist in the U.S. I learned that African American mothers breastfed at rates significantly lower than mothers from other backgrounds and that breastfeeding provides protection against numerous diseases that African Americans are disproportionately affected.

Ultimately, I am interested in improving social support for breastfeeding African American mothers and improving social norms associated with breastfeeding among this population. My academic training in public health, as well as, my professional experience has prepared me as a researcher. My academic preparation includes coursework in qualitative and quantitative research methodology, including experience in collecting and analyzing qualitative and quantitative data. My experience specifically with breastfeeding research began in 2009, when I conducted my Master's thesis on the diets of breastfeeding mothers who receive assistance from the Supplemental Program for Women, Infant, and Children. During this time, I also developed a program that aimed to increase breastfeeding initiation and duration among young African American mothers. My work with organizations that support breastfeeding mothers continues today. Through my experience in working with African American mothers, I observed barriers, such as socio-cultural factors, as well as, the facilitators that influence breastfeeding among African American mothers.

For this research study, I evaluated the experiences of African American mothers who use support groups for breastfeeding on social network sites, examining any correlations between their level of perceived breastfeeding support from using these sites and breastfeeding intentions. As a marginalized population, I feel it is important to conduct this research in such a way that

centers the voice of the mothers. Therefore, I used Black Feminist thought, as the framework for this research in that it allows African American mothers and their experiences to be the focus of the research. By using Black Feminist thought, I was able to explore the intersections of race, class, and gender within the breastfeeding experiences of Black women and how they are reflected in their experiences with social media support groups.

As a public health researcher, I am interested in eliminating health disparities. Increasing breastfeeding rates among African American women can contribute to eliminating health disparities among African Americans by decreasing rates of infant mortality, childhood illnesses, and chronic diseases. With adequate support from peers, family, and broader levels of communities and society, rates of breastfeeding can be increased among African Americans mothers, helping to lower the health disparities experienced by this population.

Integration of Findings

Triangulating, or integrating, data across multiple methods strengthens the findings (Patton, 2015). Mixed-methods triangulation allows the researcher to examine consistencies of findings across the different data sources (Patton, 2015). Within this research study, equal weight was applied to the quantitative and qualitative data to answer each research question (Creswell, 2012). The quantitative and qualitative results were examined for patterns of convergence and discrepancy (Creswell, 2009; Creswell, 2014). Table 3.1 maps each data collection method onto the research question it addresses.

Each method is explained in detail in Chapter four and Chapter five in separate manuscripts. The methodology and findings from the content analysis are included in Chapter six.

Table 3.1 *Research questions and data sources*

Research Question	*Data Source*
What is the experience of African American mothers who participate in breastfeeding support groups on social network sites?	• Survey • Focus Groups
What are the types and sources of breastfeeding support received by African American breastfeeding mothers who participate in breastfeeding support groups on SNS?	• Survey • Facebook Group Page • Focus Groups
In comparison to other sources of breastfeeding support, what is the relationship between breastfeeding support received from SNS support groups and breastfeeding duration, as moderated by perceived norms, breastfeeding attitudes, and breastfeeding self-efficacy?	• Survey • Focus Groups

CHAPTER 4

SOCIAL MEDIA SUPPORT FOR BREASTFEEDING MOTHERS: A COMPARISON TO OFFLINE SUPPORT AND ASSOCIATIONS WITH BREASTFEEDING OUTCOMES[1]

[1]Robinson, A., Davis, M., Lauckner, C., Anderson, K., Hall, J. To be submitted to the Journal of Computer Mediated Communication

Abstract

Seventy five percent of parents who use the internet report using social media, with half of mothers reporting the use of social media to give or receive social support. The patterns of social media use among mothers suggest that social media may help mothers at different stages of parenting. For breastfeeding mothers, online support groups through Facebook may be a more convenient and preferred source for accessing breastfeeding information and support, but few studies exist that examine the use of Facebook groups specifically for breastfeeding support. This study explores the types of support mothers receive through breastfeeding support groups on Facebook, other sources of breastfeeding support among social media support group users and explores a possible mechanism by which support received on social networks sites leads to behavioral outcomes among breastfeeding mothers. From July - September 2017 a survey was distributed online to breastfeeding African American mothers (N = 277) who participated in breastfeeding support groups on Facebook. The survey measured the types of support mothers received on Facebook for breastfeeding, network support from Facebook and other sources of breastfeeding support, perceived breastfeeding norms, breastfeeding self-efficacy, and breastfeeding attitudes. Correlations and linear regression analysis were used to examine the relationship between independent and dependent variables. Results suggest mothers within Facebook breastfeeding support groups receive more support from Facebook than their other sources of support. Facebook support is also correlated with intended breastfeeding duration. Self-efficacy and breastfeeding attitudes remained significant predictors of intended breastfeeding duration within the final regression model.

INDEX WORDS: Facebook; Social Media Support; Peer Support Groups; Breastfeeding Self-Efficacy; Perceived Norms; Breastfeeding Attitudes

Introduction and Literature Review

Over the last decade the number of U.S. adults engaging in social network sites has steadily increased, with Facebook reigning as the most popular platform on social media. In the U.S., 68% of all adults use Facebook (Pew Research Center, 2016). The current literature on the use of social media and social networking sites, highlights the popularity of social media across diverse demographics, including parents, of whom 75% report using social media (Duggan, 2015). Social media provides an opportunity for users to engage in an array of human experiences and daily interactions, such as providing and receiving social support (Duggan, 2015).

The positive impact of social support and health outcomes is well established in the literature. Online social support, particularly through social network sites, has also been extensively researched over the recent years and has broad implications for public health promotion and practice (Balatsoukas, Kennedy, Buchan, Powell, & Ainsworth, 2015; Capurro et al., 2014; Jin, Phua, & Lee, 2015). Studies examining social support delivered online or specifically through social media commonly measure support through categories described by Cutrona and Suhr (1992) or House (1981) (Gray, 2013; Hether, Murphy, & Valente, 2016; Johnson, Kirk, Rosenblum, & Muzik, 2015; Oh, Lauckner, Boehmer, Fewins-Bliss, & Li, 2013; Xinlin, Yang, Toso-Salman, Yvonne, Schear, & McGoldrick, 2016). Classifications of support include emotional (showing empathy, trust, and concern), informational (offering information, providing instructions, and advice), instrumental (tangible and practical assistance and can include helping with tasks, providing monetary support, and devoting time), and appraisal support (providing encouragement and affirmation through feedback) (Grassley, 2010). Cutrona and Suhr (1992) identify the following five dimensions of support: informational, emotional,

esteem, tangible, and network. Esteem support shows regard for an individual's skill and abilities, as well as, intrinsic value. Network support provides structural connections with others, rather than emotional connections (Hether et al., 2016).

A study by Pew Research Center revealed that social media is a source of parenting information and advice, with 45% of mothers indicating that they "strongly agree" that they receive support from their friends on social media. Fifty percent of mothers in this study indicated that they received emotional support, specifically regarding parenting issues on social media as well (Duggan, 2015). The patterns of social media use among mothers suggest that social media may help mothers at different stages of parenting, from early stages post-partum and infant feeding, through later stages of child rearing (Bartholomew, Schoppe-Sullivan, Glassman, Kamp Dush, & Sullivan, 2012; Holtz, Smock, & Reyes-Gastelum, 2015).

Social Media, Social Support, and Breastfeeding

Breastfeeding is the preferred source of infant nutrition due to the myriad of benefits it provides for mothers and infants (Pediatrics, 2012). A mother's decision to breastfeed is impacted by multiple factors which can be influenced within an online setting, including breastfeeding support, breastfeeding self-efficacy, societal and cultural norms, and attitudes (Audelo, 2014; Johnson et al., 2015; Reeves & Woods-Giscombé, 2015; Spencer, Wambach, & Domain, 2015). Breastfeeding support is an important factor in ensuring that a mother will be able to overcome breastfeeding challenges and support from other mothers is a preferred mechanism for receiving support (Britton, McCormick, Renfrew, Wade, & King, 2012; Brown, Raynor, & Lee, 2011; CDC, 2013). While the majority of the literature on breastfeeding support focuses on in-person settings, among the actions detailed in the Surgeon General's 2011 call to action to support breastfeeding, was the use of new media and forms of electronic

communication to reach young women and their families (Britton et al., 2012; Services, 2011). Other researchers in the lactation field have also called for the use of social media to support breastfeeding mothers, a push to adapt to the changing landscape of how mothers seek support and information (Audelo, 2014; Wolynn, 2012).

In addition to providing support for breastfeeding mothers, the use of social media may also influence other factors related to breastfeeding outcomes. For example, one study found that exposure to informational messages on breastfeeding pages on Facebook led to pro-breastfeeding attitudes (Jin et al., 2015). Furthermore, media exposure to breastfeeding improves self-efficacy and may also improve breastfeeding norms (Gross, Powell, Anderson, Hall, Davis, & Hilyard, 2015; Tuan, Kim, Tuan, Hajeebho, Tran, & Alayon, 2016). A randomized control trial conducted in Viet Nam evaluated the combined and individual effects of a mass media campaign to promote breastfeeding and interpersonal counseling on exclusive breastfeeding practices (Tuan et al., 2016). The purpose of the mass media campaign was to shape breastfeeding norms and to advocate for supportive policies and services to support breastfeeding. Study participants were also provided with knowledge, skills, and breastfeeding support through interpersonal counseling. The results of multiple linear regressions and structural equation modeling showed that the combination of interpersonal counseling and the mass media campaign, in comparison to each component individually, led to greater changes in psychosocial factors, which in turn, positively impacted breastfeeding behaviors (Tuan et al., 2016). Separately, the mass media campaign and interpersonal counseling were also significantly associated with more positive social norms surrounding breastfeeding. The findings from this study highlight the influence of media in shaping breastfeeding norms, which may also apply within social media environments.

Breastfeeding Support Groups on SNSs

Online support groups through Facebook may be a more convenient and preferred source for accessing breastfeeding information and support among mothers, in comparison to other settings (Asiodu, Waters, Dailey, Lee, & Lyndon, 2015; Bridges, 2016; Niela-Vilen, Axelin, Melender, & Salantera, 2015). Several qualitative studies have examined breastfeeding support groups on social network sites, providing some insight into how mothers use these groups (Bridges, 2016; Niela-Vilen et al., 2015). Bridges (2016) conducted observations, online in-depth interviews with participants (n = 3), and online focus groups (n = 17) with the administrators of three closed breastfeeding support Facebook groups in Australia to explore how breastfeeding mothers experienced support within these groups. Inductive thematic analysis of the interview and focus groups responses revealed an overarching theme of support. Four subthemes described the nature of support experienced by participants in the Facebook groups and included community, complementary, immediate, and information. The immediate access of information from other mothers to meet unmet informational needs and to build skills for breastfeeding was found across studies, in which participants used Facebook for breastfeeding support (Asiodu et al., 2015; Bridges, 2016; Niela-Vilen et al., 2015).

Similarly, a study with Finland mothers of preterm infants (N = 22) found that mothers often received inadequate support for breastfeeding from the nurses while in the hospital postpartum. Mothers in this study were provided access to a Facebook peer support group. Postings created from June 2011 through February 2013 (N = 305) were analyzed using inductive thematic analysis. Mothers described feeling inadequately prepared for breastfeeding once they returned home from the hospital and used the peers in the Facebook group to obtain needed information and support (Niela-Vilen et al., 2015).

African American mothers in other studies also discussed their use of social media to gain breastfeeding support, in addition to, overcoming social isolation (Asiodu et al., 2015; Kim, Fiese, & Donovan, 2017). In one study, African American mothers reported social media platforms as the preferred mechanism for obtaining important information during the antepartum and postpartum periods (Asiodu et al, 2015). Mothers in this study who were exclusively breastfeeding described Facebook as invaluable in providing support. The association with exclusive breastfeeding and online support is an important finding considering that African American mothers in the U.S. fall below the recommendations to exclusively breastfeed for six months.

Empirical evidence shows a positive relationship between online breastfeeding support, or other e-technologies, and breastfeeding outcomes. However, research specifically investigating breastfeeding support delivered through Facebook, the most popular form of social media, has been less commonly explored in the literature (Gray, 2013; Lau, Htun, Tam, & Klainin-Yobas, 2016). Quantitative studies that explore the mechanism by which online peer support relates to breastfeeding outcomes and other factors related to breastfeeding outcomes are also limited (Audelo, 2014; Wolynn, 2012). Finally, in the existing literature, the extent of other sources of breastfeeding support for mothers who participate in Facebook support groups is also unclear. Understanding the extent of breastfeeding support, both through Facebook and through other sources, for participants in these groups can aid in better understanding this phenomenon and can be used to create more tailored breastfeeding support services for this population in the future.

Purpose

This study is part of a larger mixed methods study that explores the experience and breastfeeding outcomes of African American mothers who participate in Facebook groups for breastfeeding support. The purpose of this study is to explore the types of support mothers receive through breastfeeding support groups on Facebook and to explore a possible mechanism by which support received on social networks sites leads to behavioral outcomes among breastfeeding mothers. Specifically, this study proposes that the relationship between breastfeeding support received within Facebook support groups and intended breastfeeding duration is moderated by breastfeeding self-efficacy, breastfeeding attitudes, and perceived breastfeeding norms. The following research questions were addressed:

RQ1: What are the types of support and sources of breastfeeding support received by African American mothers who participate in breastfeeding support groups on social network sites?

RQ2: In comparison to other sources of breastfeeding support, what is the relationship between breastfeeding support received from SNS support groups and breastfeeding duration, as moderated by perceived breastfeeding norms, breastfeeding attitudes, and breastfeeding self-efficacy?

Theoretical Framework

A model adapted from Fishbein's and Ajzen integrative model of behavior prediction (IMBP) was applied to this study (Montano, 2015). The integrated model of behavior prediction integrates the Theory of Planned Behavior (TPB), the Theory of Reasoned Action (TRA) and draws constructs from other theories, such as social cognitive theory (Montano, 2015). The IMBP describes intention as the strongest determinant of behavior. Breastfeeding intention, or

intended breastfeeding duration, is significantly related to actual breastfeeding duration (Swanson & Power, 2005). Within IMBP, an individual's intention to perform a behavior is determined by their attitudes toward the behavior, perceived norm, and personal agency (Montano, 2015). According to the model, behavior is likely to occur if the individual has strong intentions to perform the behavior, necessary skills to perform the behavior, and if environmental constraints to performing the behavior are absent (Fishbein, 2003).

Perceived norms, as measured within IMBP, includes both injunctive and descriptive norms (Ismail & Bakar, 2016). Injunctive norms are determined by an individual's normative beliefs (whether influential persons approve or disapprove of a behavior) (Montano, 2015; Ismail & Bakar, 2016). Descriptive norms, on the other hand, describe the perceived prevalence of a behavior (Swanson & Power, 2005). The final construct within the IMBP, personal agency, includes self-efficacy and perceived control (one's perception of the degree to which certain factors make it easy versus difficult to complete the behavior). Perceived behavioral control is also frequently operationalized as self-efficacy across breastfeeding literature, which may be a stronger predictor of breastfeeding (Swanson & Power, 2005; Dennis, 2003; Johnson et al., 2015; Meedya, Fahy, & Kable, 2010; Reeves & Woods-Giscombe, 2015). Therefore, self-efficacy to breastfeed was measured instead of personal agency. Self-efficacy was defined as "A mother's belief that she will be able to organize and carry out the actions necessary to breastfeed her infant", as defined in a study by McCarter-Spaulding & Gore (2012, p.112).

Finally, within the IMBP model, factors like media and intervention exposure are categorized as distal variables that indirectly influence behavior (Montano & Kaspryzk, 2012). Support received through the Facebook group and other sources of support therefore serve as distal factors that indirectly influence breastfeeding intentions. Breastfeeding support was

defined as *"the availability of information and assistance for breastfeeding."* The resulting outcome of intended breastfeeding duration was defined as *"The number of months or weeks that a mother intends to provide any breastmilk to her child."*

The relative influence of the variables in the model on behavioral intentions and behaviors varies depending upon the behavior and population. The following conceptual (Figure 1) model depicts the relationship between the constructs and study outcome, intended breastfeeding duration.

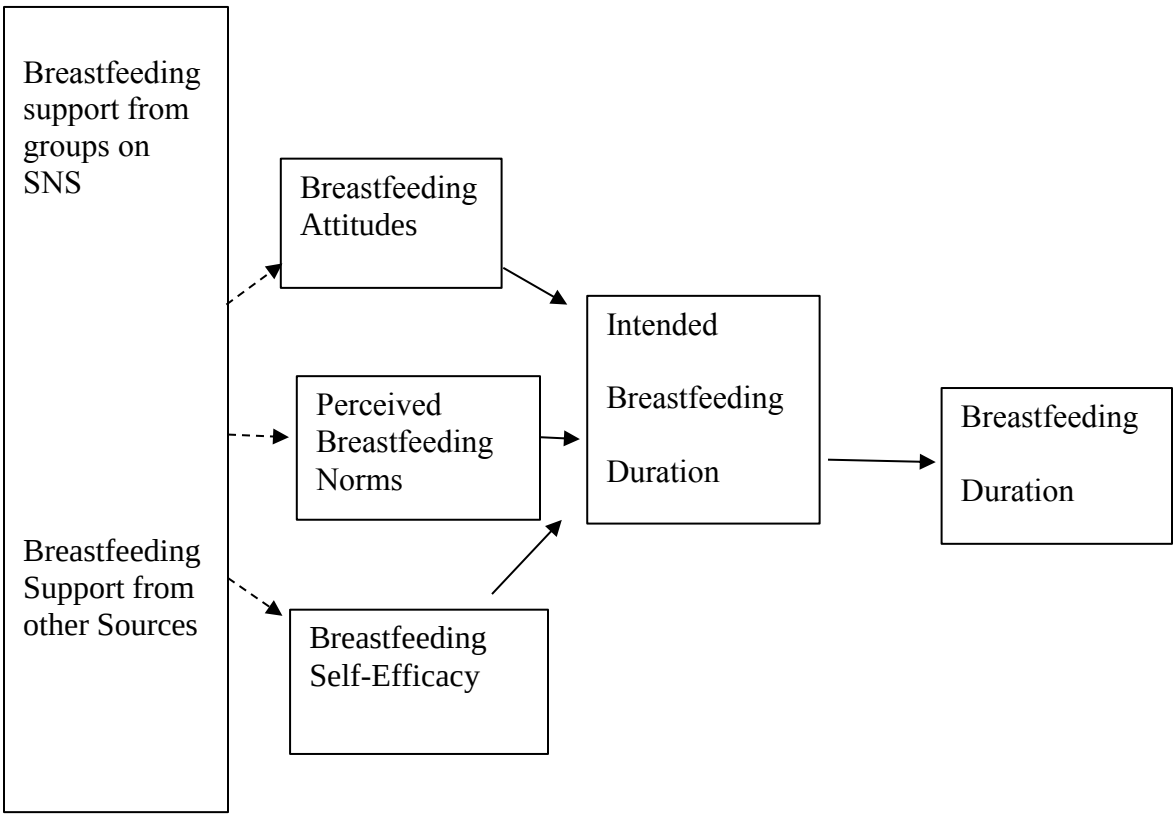

Figure 4.1. (Conceptual Model Describing the Relationship Between Online Breastfeeding Support and Breastfeeding Intentions and Duration)

Methods

Population

The target population for this study was self-identifying African American mothers who were breastfeeding at the time of data collection and also participating in a breastfeeding support group on Facebook. Breastfeeding was defined as the receipt by the infant of any breastmilk within the past 24 hours (McCarter-Spaulding, 2012). Additional inclusion criteria were as follows:

- Primiparas (first-time mother)
- 18 years old or older

Measures

A survey with 29 questions was designed to address the research questions and to measure the constructs within the theoretical model for the survey. The survey took approximately 15 minutes to complete. The survey measures are described in detail below. The reliability was determined to be within the acceptable range for each scale.

Breastfeeding Support. An adapted version of The Network Support for Breastfeeding (NSB) instrument developed by McCarter-Spaulding and Gore (2012), measured breastfeeding support from members within the Facebook group and other sources of breastfeeding support. The original scale was developed to measure the availability and quality of the network support for breastfeeding. The Cronbach's alpha for the original instrument showed a reliability coefficient of 0.87-.90. The average support scores, which ranged from 0 to 3, were calculated for each person in the mother's network. The original scale measured support from five to seven individuals identified by the mothers. In a sample of 155 Black mothers, the highest levels of support for breastfeeding were the woman's mother, partner, and friends. Breastfeeding support

from pediatricians was also high and on average received a score of 2.8 out of three among this sample of mothers.

The instrument developed by McCarter-Spaulding (2012) used an inductive approach to identify significant sources of breastfeeding support among a population of African American mothers. Using the findings from McCarter-Spaulding (2012), the principal investigator applied a deductive approach to develop categories of breastfeeding support African American mothers may encounter, in addition to the support they receive from the Facebook support group. The network support scales for breastfeeding used in this study had five items and measured support received from the participants' Facebook support group ($\alpha = .69$), spouse or partner ($\alpha = .87$), mother ($\alpha = .88$), other family members ($\alpha = .89$), friends/peers ($\alpha = .88$), and healthcare providers ($\alpha = .90$). In addition to the five categories listed, mothers were provided an opportunity to list one additional source of breastfeeding support they considered significant and completed the scale for that individual.

Types of Breastfeeding Support. The Health-Related Social Support Scale measures four dimensions of social support (appraisal, esteem, emotional, and instrumental) and was adapted to measure the types of support mothers received within the Facebook breastfeeding support groups (Oh et al., 2013). The scale consists of 11 items and uses a seven-point Likert scale, ranging from "definitely false" to "definitely true". Factor loadings for each item in the original scale ranged from .71 to 0.95 and alphas for the dimensions of support ranged from 0.89 through 0.91 (Oh et al., 2013). The adapted version of the Health-Related Social Support Scale used in this study had an overall alpha of .91. Within the scale, three items were used to measure appraisal support ($\alpha = .83$), three items were used to measure esteem support ($\alpha = .92$), three

items were used to measure emotional support (.92), and two items measured instrumental support (α = .86).

Breastfeeding Attitudes. The IOWA Infant Breastfeeding Scale, developed by De La Mora, Russell, Dungy, Losch, and Dusdicker (1999), was used to measure breastfeeding attitudes. The IOWA Infant Breastfeeding Scale consists of 17 items, in which eight items reflect positive attitudes towards breastfeeding and the remaining reflect favorable attitudes towards formula feeding (De La Mora et al., 1999). This scale has been tested for validity and reliability across diverse populations, including African Americans (Jefferson, 2014). The initial studies on reliability and validity predicted acceptable reliability scores, with Cronbach alpha scores ranging from .85 to .86 (De La Mora et al., 1999). For this study, Cronbach alpha score was .70. Possible scores range from 17-85. Scores ranging from 70-85 are categorized as a positive attitude towards breastfeeding. Scores 49-69 are categorized as having a neutral attitude towards breastfeeding. Scores ranging from 17 to 49 are categorized as having a negative attitude towards breastfeeding (Kim, Fiese, & Donovan, 2017).

Breastfeeding Self-Efficacy. The Breastfeeding Self-Efficacy Short Form (BFSE-SF) scale is a 14-item scale that measures breastfeeding self-efficacy (Dennis, 2003). Similar to the IOWA Infant Breastfeeding Scale, the BFSE-SF scale has been used to measure self-efficacy among diverse populations of breastfeeding mothers (Dennis, Heaman, & Mossman, 2011; McCarter-Spaulding & Dennis, 2010). Reliability testing for the short form scale yielded a Cronbach alpha coefficient of 0.94 (Dennis, Hodnett, Gallop & Chalmers, 2002). Dennis et al. (2002) noted that this scale may be used to determine the efficacy of various types of breastfeeding interventions and to identify women at risk for early breastfeeding cessation. Possible scores for the breastfeeding self-efficacy scale range from 14-70, with a higher score

indicating higher self-efficacy (Kim et al, 2017). Within this study, the alpha was 0.89 for the Breastfeeding Self-Efficacy scale showing reliability measurements similar to previous studies.

Perceived Breastfeeding Norms. The scale used to measure perceived breastfeeding norms in this study consisted of ten items (α = .86) and was adapted from a scale developed by Tuan et al. (2016) to measure perceived breastfeeding norms. The factor analysis conducted on the original scale suggested adequate internal consistency for the items in the scale (Tuan et al., 2016). The scales include items such as *"Most people who are important to me (e.g. family members, friends) think I should breastfeed my infant for one year or longer."* (injunctive norms).

Facebook Indicators. Frequency of using the support group was measured using a single Likert scale question adapted from a Pew Research Study on the use of social media use. The question asked, *"About how often do you visit this Facebook group?"* and included the following response options: *"several times a day; about once a day; 3–5 days a week; 1–2 days a week; every few weeks; less often"* (Hampton, Goulet, Rainie, & Purcell, 2011). This scale has been used in other studies measuring social support on social network sites (Zhang, Campo, Yang, Janz, Snetselaar, & Eckler 2015). Length of participating in the support group was assessed by the following question, which was also adapted from the Pew Research Center study on social media use: *"About how long ago did you start using this Facebook support group?"* (Hampton et al., 2011).

Breastfeeding Intentions (Intended Duration of Breastfeeding). Breastfeeding intentions were measured by a single open-ended question, in which study participants were asked *"How many weeks or months do you plan to breastfeed or provide pumped milk to feed your baby?"*

Demographics. The following demographic information was collected within the survey: current breastfeeding duration, state of residence, country of birth, birth year, highest level of education, household income, and marital status. In addition, the survey collected information on medical complications or factors during delivery that may influence breastfeeding outcomes, such as preterm births, multiple births, caesarean deliveries, intensive care stays, and other medical conditions experienced by the infant that affected feeding.

Survey Pilot

Prior to data collection, the principal investigator conducted two rounds of survey pretesting. The first round of pretesting was conducted with a group of expectant and new mothers (N = 6). Participants were provided with an overview of the research study and questions to guide their review. The purpose of this round of pretesting was to evaluate the content of the survey, flow of questions, comprehension, and readability of survey items among a population similar to the target population. Each mother completed the survey and participated in a follow up interview to provide detailed feedback. The second round of pretesting was conducted with subject matter experts and a survey methodologist (N = 4). Participants in the second round of testing critiqued the survey using the aforementioned criteria and also provided edits based on subject matter expertise. Following each round of testing, feedback was summarized, and additional edits were made to further refine the survey instrument.

Recruitment and Data Collection

A convenience sample of participants were recruited directly from Facebook. The principal investigator used key words to search Facebook for breastfeeding support groups for Black mothers. The principal investigator identified nine potential groups and recruited participants from six of those groups. The number of group members in each participating group

ranged from 106 to 26,000 at the time of data collection. The principal investigator first joined each group and contacted the page administrator(s). The administrators were provided with a description of the study and data collection procedures and asked for permission to recruit participants (Appendix A). Contact with the page administrators was an important step in gaining trust and credibility within the online communities and in ensuring transparency. At the discretion of the page administrators, the initial post within the group was either made by the researcher or an administrator. The post described the purpose of the research study and invited group members to participate in the survey. A recruitment flyer was also created and posted (Appendix B.). The Facebook message posted in the support groups provided the Qualtrics link to access the informed consent letter (Appendix C.), the survey screener (Appendix D.) and the survey (Appendix E.). Survey entries were housed in Qualtrics for the duration of the study within a password protected account.

During the data collection process, the researcher closely monitored the demographics of survey respondents in Qualtrics. In addition to the initial study announcement, the researcher also scanned the largest participating Facebook group for potential participants and sent Facebook messages with the study announcement directly to women who potentially qualified for the research study. The survey link remained open for two months. This study was approved by the Human Subject Institutional Review Board at the University of Georgia.

Statistical Analysis

Following survey administration, survey data was downloaded from Qualtrics and analyzed in SPSS. Frequencies were run for all the study variables and descriptive statistics were ran for continuous variables. Breastfeeding duration and breastfeeding intended duration were converted from weeks to months when necessary. A composite score was computed for each

dimension of social support, breastfeeding self-efficacy, and breastfeeding attitudes by calculating the sum across the items within the scales. Nine items within the scale used to measure breastfeeding attitudes were more favorable towards formula and were therefore reverse coded before calculating the composite score. The two scales measuring injunctive and descriptive norms were combined to create one composite score measuring perceived breastfeeding norms. Three items within each scale, which reflected less favorable perceived breastfeeding norms, were first reverse coded. The score for each source of breastfeeding support was calculated by adding the items together and computing the mean. Each source of breastfeeding support outside of the Facebook group was then computed into one score, called non-Facebook support, which was compared to Facebook support scores. In addition, a dichotomous variable was created to determine the percentage of participants who did and did not receive any amount of breastfeeding support from each source. Next, correlations between the independent and the dependent variable were calculated to measure the relationship between breastfeeding attitudes, breastfeeding self-efficacy, perceived breastfeeding norms, breastfeeding support scores, and intended breastfeeding duration. Correlation analyses were also conducted to detect any significant relationships with participant characteristics, such as age, income, and current breastfeeding duration.

To test the hypothesis that breastfeeding self-efficacy, breastfeeding attitudes, and perceived breastfeeding norms moderate the relationship between breastfeeding support and intended breastfeeding duration, a multiple linear regression analysis was conducted. Variables for the model were mean-centered to avoid multicollinearity. The centered Facebook support variable was multiplied by the centered moderating variables to create interaction terms. In the first step, the independent variable, moderators, and the dependent variable were included in the

regression model. Next, the computed interaction terms were added to the regression model in step two. Models were compared for significance and to determine the effect of the moderators on the relationship between Facebook breastfeeding support and intended breastfeeding duration.

Results

Demographics

Over 300 mothers attempted to take the survey, which was completed by 277 participants. Respondents were most commonly screened out because they were not first-time mothers. Participants' age ranged from 19 to 42 years old. The average age of mothers within this study was 29 (n=265, ±4.8). Breastfeeding duration at the time of the survey ranged from 1 week to 40 months. The average participant was breastfeeding for 9.4 (±8.1) months at the time of data collection and 76.2% (n=211) of mothers had an infant older than three months. Three-fourths of participants were married or cohabitating with their partner (n=210) and nearly 69% (n=190) held a bachelor's degree or higher. The majority of participants (n=220, 79%) reported joining the Facebook breastfeeding support group one year ago or less. The majority of participants (n=234, 84.4%) also reported visiting the group once a day to several times a day (Table 4.1).

Table 4.1. *Survey Participants' Demographics and Characteristics*

Demographic/Characteristic	*N*	Percent (%)
Infant and child birth		
Infant age (older than three months)	277	76.2
Medical problems that prevented breastfeeding for more than one week (No)	277	98.9
Baby intensive care stay (No)	277	89.9
Delivery before 37 weeks (No)	277	90.3
Breastfeeding practices		
Exclusive breastfeeding	247	46.2
Mixed feeding	247	53.8

Country of birth		
United states	254	96.5
Outside of U.S.	254	3.6
Length of time in Facebook group		
Less than 6 months	277	41.9
Between 6 months and 1 year	277	37.5
More than 1 year, but less than 2 years	277	14.4
Two or more years	277	6.1
Frequency of visiting Facebook support group		
Several times a day	277	61.7
About once a day	277	22.7
3–5 days a week	277	9
1–2 days a week	277	5.1
Every few weeks	277	1.1
Less often	277	0.4
Participant demographics		
Age		
18-24	265	11.7
25-29	265	43.8
30-34	265	26.4
35-39	265	14.3
40 and older	265	3.8
Married/cohabiting	277	75.8
Maternal education		
High school diploma or equivalent	277	21.7
Associates degree	277	9.7
Bachelor's Degree and Higher	277	68.6
Annual household income		
Less than $20,000	277	13.3
$20,000 - $39,999	277	17.3
$40,000 - $69,999	277	27.8
$70,000 - $99,999	277	16.2
$100,000 or more	277	25.3

Breastfeeding Support from Facebook and Other Sources

Table 4.2 displays the scores across the moderating variables measured in this study, types of support within the Facebook groups, as well as, the network support scores for breastfeeding for each source of support. The average score on the infant feeding attitudes scale for participants in this study was 72.2 (± 6.1). On average, participants in this survey scored 59.4

(± 9.2) for breastfeeding self-efficacy. The average score for perceived breastfeeding norms was 34.1, with a possible range of 10-60.

Participants most commonly reported receiving esteem support (19.4, ±2.79) and emotional support (19.2, ± 3.18) within their Facebook group. Nearly all participants reported receiving support from each outside source of support measured: spouse/partner, mother, health care providers, other family members, and peers. Participants' network breastfeeding support scores differed, however, between each source of support. The Facebook breastfeeding group support had the highest average score of 2.7 (±0.38) out of 3. The lowest network support scores were reported from the maternal grandmother, which on average had a score of 1.7 (±0.88). Outside of the categories listed in the survey, nearly 40% (n=104) of participants also reported an additional significant source of breastfeeding support. Among these participants, common responses included WIC and the Le Leche League. A number of respondents who listed this additional source of support also described health care providers, such as lactation consultants or lactation counselors, or listed multiple sources previously captured within the survey. Since respondents often described sources that overlapped with categories previously measured within the survey, responses for other sources of breastfeeding support were excluded from calculating non-Facebook support. The average score for total non-Facebook support was 1.8 (±0.49), in comparison to Facebook support (2.7, ±0.38).

Table 4.2. *Average Score for Breastfeeding Support*

(Average Score for Breastfeeding Support (Facebook and Other Sources), Types of Support on Facebook, and Scores for Breastfeeding Outcomes)

	N	*Mean (Standard Deviation)*
Self-Efficacy	271	59.4 (9.18)
Breastfeeding Attitudes	267	72.2 (6.12)
Perceived Breastfeeding Norms	267	34.1 (10.7)
Facebook Group Support (mean score (0-3)	275	2.7 (0.38)
Network Breastfeeding Support Scores		
Spouse/Partner Support (%yes, mean score (0-3))	274	96.4%; 2.0 (0.78)
Maternal Grandmother Support (%yes, mean score (0-3)	272	96.7%; 1.7 (0.88)
Other Family Members (%yes, mean score (0-3))	276	97.1%;1.4 (0.81)
Peer Support (%yes, mean score (0-3))	275	96.7%; 1.9 (0.82)
Health Care Provider Support (%yes, mean score (0-3))	274	99.3; 2.3 (0.74)
Types of Support on Facebook		
Instrumental	272	6.9 (3.79)
Esteem	273	19.4 (2.79)
Appraisal	272	18.4 (3.41)
Emotional	265	19.2(3.18)
Intended Breastfeeding Duration (months)	272	18.9 (9.07)

After removing five outliers from intended breastfeeding duration, which ranged from 60-99 months and were outside of the normal distribution curve, intended breastfeeding duration ranged from 2 months to 48 months. The average intended breastfeeding duration was 18.9 months (± 9.07).

Approximately 10% of survey respondents reported experiencing at least one of the medical complications listed in the survey. The number of participants in these categories was

too small to detect statistical significance and therefore was not included in the correlations. There were no participant demographics that were significantly related to intended breastfeeding duration, though age did approach significance ($p = 0.05$). Correlation analysis revealed a significant relationship between the following independent variables and intended breastfeeding duration: Facebook support ($p = 0.03$), peer support ($p = 0.02$), breastfeeding self–efficacy ($p < 0.01$), breastfeeding attitudes ($p < 0.01$) and current breastfeeding duration ($p < 0.01$) (Table 4.3.). A significant relationship was not detected for the non-Facebook breastfeeding support variable and intended breastfeeding duration. Non-Facebook support therefore was not included in the regression analysis. Interaction variables were created for Facebook and breastfeeding self-efficacy, perceived breastfeeding norms, and breastfeeding attitudes for inclusion within the linear regression model.

Table 4.3. *Correlations between Independent Variables and Intended Breastfeeding Duration*

Variable	Age	Facebook Support	Non-Facebook Support	Breastfeeding Attitudes	Breastfeeding Self-Efficacy	Perceived Breastfeeding Norms	Intended Breast-feeding Duration	Current Breast-feeding Duration
Age								
Facebook Support	-.185*							
Non-Facebook Support	-.08*	0.02*						
Breastfeeding Attitudes	-.16*	.22*	-0.05					
Breastfeeding Self-Efficacy	-.18*	.19*	-.74*	.35*				
Perceived Breastfeeding Norms	.12	-.01	.25*	-.08	0.07			
Intended Breastfeeding Duration	.05	.13*	-.05	.23*	.25*	-.12		
Current Breastfeeding Duration	.21*	.10	-.15*	.08	.15*	.01	.60*	

*$p \leq .05$

The linear regression model included two blocks. Block one of the regression model included the mean centered independent variables. The variables in model one accounted for 39% of the variance in predicting intended breastfeeding duration (F (5, 239) = 30.59), p <.001. Block two added the interaction terms between Facebook support and the moderating variables. Model two (R^2 = 0.40, F (9, 235) = 17.46), p <.001) was significant in predicting the outcome variable as well. The F change for model 2, however, was not statistically significant, indicating that the addition of the moderating variables did not impact the overall variance predicted, ΔR^2 = 0.01, ΔF (4, 235) = 1.03, p = 0.39 (Table 4.4.). The individual interaction terms were also not statistically significant within the model. The interaction terms were therefore dropped from the model and the final model included the predictors without the interaction effects (Table 4.5.) The predictors in the final model accounted for 39% of variance (F (4,239) = 39.59), p <.001.

Table 4.4. *Predicting Intended Breastfeeding Duration among African American Mothers*

(Predicting Intended Breastfeeding Duration among African American Mothers who participate in Breastfeeding Support Groups on Facebook – Model 1 and Model 2)

	Model 1				Model 2			
Variable	**B**	**SE B**	**β**	***sr²***	**B**	**SE B**	**β**	***sr²***
Facebook support	.32	1.21	.01	.00	.06	1.30	.00	.00
Breastfeeding self-efficacy	.13	.05	.13*	.01	.14	.05	.14*	.02
Perceived (positive) breastfeeding norms	-.07	.42	-.09	.01	-.09	.04	-.11*	0.01
Breastfeeding attitudes	.20	.08	.13*	.12	.21	.08	.14*	.02

Current breastfeeding duration	.66	.06	.55***	0.01	.66	.07	.55***	.26
Facebook support x bf attitudes					-.27	.24	-.06	.02
Facebook support x perceived bf norms					.22	.13	.09	.00
Facebook support x breastfeeding self-efficacy					.01	.12	.01	.71
Facebook support x current bf duration					.02	.21	.01	.00
R^2	.39				.40			
Adjusted r^2	.38				.38			
F	30.59***				1.03			

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4.5. *Final Model*

(Final Model Predicting Intended Breastfeeding Duration among African American Mothers who participate in Facebook Groups for Breastfeeding Support)

Variable	B	SE B	β	sr^2
Facebook Support	.32	1.2	.01	.00
Breastfeeding Self-Efficacy	.13	.05	.13*	.01
Perceived Breastfeeding Norms	-.07	.04	-.09	.01
Breastfeeding Attitudes	.20	.08	.13*	.01

Current Breastfeeding Duration	.66	.06	.55***	.30
R^2	.39			
Adjusted r^2	.38			
F	30.59***			

* $p < .05$, ** $p < .01$, *** $p < .001$

Within the final model, breastfeeding self-efficacy, breastfeeding attitudes, and the current breastfeeding duration of participants remained significant predictors. The model predicted participants' intended breastfeeding duration increased .126 for each unit increase in breastfeeding self-efficacy. Intended breastfeeding duration increased .197 for each unit increase in breastfeeding attitudes.

Discussion

This study explored the use of breastfeeding support groups on Facebook by African American mothers, the types of support received within this setting, and the relationship between breastfeeding support on Facebook and breastfeeding outcomes. This study also examined the other sources of breastfeeding support available to mothers who participate in Facebook groups designed to provide mothers with peer-to-peer breastfeeding support. To the researcher's knowledge, this is the first study to employ quantitative methods to examine the extent to which mothers who participate in Facebook breastfeeding support groups receive support from other sources within their networks and to examine the relationship between breastfeeding support received on Facebook with psychosocial and behavioral outcomes. It is also the first study to quantitatively measure the mothers' perceptions of how much breastfeeding support they receive within this type of setting, specifically through a scale designed to measure breastfeeding support.

Types of Support for Breastfeeding

Research question 1, in part examined the dimensions of social support present within Facebook support groups for breastfeeding mothers. The Health Related Social Support Scale, developed by (Oh et al., 2013) was adapted to measure the dimensions of support available through breastfeeding support groups on social media. The results revealed that participants received more esteem and emotional support within their Facebook groups, in comparison to the other types of support, followed by appraisal support. Instrumental, or tangible support, was less commonly reported. These findings are consistent with the findings from other literature, which suggests that individuals who seek support online primarily seek emotional and esteem support (Oh et al., 2013). As it relates to health issues, individuals may seek emotional support to improve or cope with health conditions, which is documented in other literature on online support seeking behaviors as well (Coulson & Greenwood, 2012; Gray, 2013; Greene, Choudhry, Kilabuk, & Shrank, 2011; Oh et al., 2013). This study, however, specifically examined these dimensions within breastfeeding support groups, which is a novel addition to the literature. Furthermore, the reliability of the adapted scale to specifically measure breastfeeding support suggests that the scale can be used in other studies measuring breastfeeding support within online settings. Informational support, however, was not measured in this scale. Studies examining social support messages within online breastfeeding support groups, or other support groups for moms, have also found that mothers commonly receive informational support within these groups as well (Gray, 2013; Hether et al., 2016). Future studies examining the types of breastfeeding support requested and received online should include survey items to measure informational support as well.

Sources of Breastfeeding Support and Breastfeeding Outcomes

The findings from this study suggest that majority of African American mothers who participate in Facebook groups for breastfeeding support receive varying levels of breastfeeding support from other sources within their networks as well. Other studies on breastfeeding among African American mothers suggest that Black mothers may not receive the needed support from breastfeeding support professionals and health care providers (Johnson et al., 2015). Conversely, in this study, support from health care providers, which included lactation consultants, received the highest average score for support, outside of Facebook groups. Less than 5% of participants in this study reported having no additional sources of breastfeeding support.

Interestingly, the average support scores from the Facebook groups were higher than their other sources of breastfeeding support. This suggests that mothers who participate in these groups receive a greater amount of breastfeeding support within their Facebook group than they receive from other sources within their network. Other studies with mothers who seek support online for breastfeeding found that mothers sought additional support outside of their in-person networks (Asiodu et al., 2015; Bridges, 2016; Giglia, Cox, Zhao, & Binns, 2015). Though mothers may receive support outside of social media groups, the support received online may compensate for varying levels of support for breastfeeding received elsewhere. Furthermore, the average breastfeeding duration for participants in this study was nine months. This is an important finding in that mothers have reported a lack of support to sustain long-term breastfeeding, which is something mothers are able to receive within Facebook group that include group members at various breastfeeding stages (Cross-Barnet, Augustyn, Gross, Resnik, & Paige, 2012).

Since support is an important factor in predicting breastfeeding duration, it is important to understand how and if support received in social media groups, particularly Facebook, relates to mothers' decisions on breastfeeding duration. Within this study, Facebook support was significantly correlated with intended breastfeeding duration, which suggests that support mothers receive within the Facebook group may be an important factor relating to breastfeeding decisions. These findings are also consistent with other research findings that underscore the positive influence of peer support on a mother's breastfeeding decisions (Powell, Davis, & Anderson, 2014). No other studies, however, have examined breastfeeding peer support groups exclusively implemented online for African American mothers. The lack of positive imagery of African American breastfeeding mothers in the media has been cited in other studies as well (Asiodu et al., 2015; Gross et al., 2015). It is possible that access to other African American mothers on social media who are also breastfeeding plays a role in breastfeeding decision making among mothers who participate in these groups.

Furthermore, the average intended breastfeeding duration for mothers in this study was approximately 19 months. This is an important finding considering that 14.1% of African American infants are exclusively breastfed at six months, with 17.1% of African American infants breastfed at 12 months (Anstey, Chen, Elam-Evans, & Perrine, 2017). In addition, the majority of participants in this study reported visiting their Facebook support group at least once per day, with 62% reporting that they visited their Facebook group several times a day. The high frequency of visiting these groups, the high levels of support received from the groups, and the significant association with intended breastfeeding duration again suggests that mothers who participate in Facebook breastfeeding support groups receive the support needed to sustain breastfeeding. The cross-sectional design of this study, however, does not allow for the

determination of temporality. Thus, it is not possible to discern if the intended breastfeeding duration preceded participating in the Facebook groups or resulted from participation.

On the other hand, although nearly all participants reported receiving breastfeeding support outside of the Facebook group, the total support participants received for breastfeeding outside of Facebook was not significantly correlated with intended breastfeeding duration. Support across each additional source of breastfeeding support received an average score of 1.86 out of three. Individually, support scores from the participants' mothers, spouses, other family members, or health care providers were also not significantly correlated with breastfeeding intended duration in this study. This finding is different from other research findings which suggest that a mother's spouse and mother are important factors in determining breastfeeding initiation and continuation, especially when receiving informational or emotional support from these sources (Emmott & Mace, 2015; Mitchell-Box & Braun, 2013; Kornides & Kitsantas, 2013). Considering that the amount of support received from these sources were not as high as the amount of support received from Facebook, it is possible that the support received within the Facebook group again compensated for less support received within these traditional networks. Peer breastfeeding support, on the other hand, was significantly associated with breastfeeding, which is consistent with the literature on the importance of peer support. Peers, which share similar characteristics, have an essential role in normalizing a behavior (CDC, 2013; Kaunonen, Hannula, & Tarkka, 2012; Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012).

The interactions terms with Facebook support and the psychosocial factors of interest (self-efficacy, perceived breastfeeding norms, and breastfeeding attitudes) were not significant within the regression model. The findings therefore suggest that the direction and/or strength of the relationship between Facebook support and intended breastfeeding duration is not affected by

the psychosocial factors examined in this study. In addition, breastfeeding support within a Facebook group was significantly correlated with breastfeeding intended duration but was not a significant predictor in the model. On the other hand, breastfeeding self-efficacy and breastfeeding attitudes remained significant predictors of intended breastfeeding duration within the regression model, which is consistent with other studies on breastfeeding intentions and duration (Brockway, Benzies, & Hayden, 2017; de Jager, Broadbent, Fuller-Tyszkiewicz, & Skouteris, 2014; Johnson et al., 2015; Spencer et al., 2015). The findings from this study therefore suggests that while Facebook support may be an important factor, based on the bivariate analysis, breastfeeding self-efficacy and breastfeeding attitudes are stronger predictors of breastfeeding outcomes.

The importance of breastfeeding self-efficacy is not a determinant unique to African American mothers. However, improving low self-efficacy in this population is critical because of lower breastfeeding rates, higher risk for early breastfeeding cessation, and greater perceptions of breastfeeding barriers (Meedya et. al, 2010). In one study conducted among breastfeeding African American mothers, self-efficacy predicted breastfeeding duration and breastfeeding exclusivity at four weeks and 24 weeks post-partum (McCarter-Spaulding & Dennis, 2010). Participants in this study on average scored high on the self-efficacy scale and breastfeeding attitudes scale, which is not surprising considering the study included a population of mothers who were currently breastfeeding (Kim et al., 2017). A unique finding in this study is that perceived breastfeeding norms were not significantly correlated to intended breastfeeding duration in the final model, unlike other studies, which discuss the importance of norms particularly among African American mothers (Johnson et al., 2015; Kim et al., 2017).

Implications for Future Studies

In the future, longitudinal studies are needed to examine changes in self-efficacy, perceived breastfeeding norms, and breastfeeding attitudes over time for mothers who join breastfeeding support groups online. Due to the cross-sectional design of this study, the principal investigator is not able to determine if high self-efficacy, norms, and attitudes regarding breastfeeding were influenced by group participation. Other literature suggests, however, that online breastfeeding attitudes and norms can be influenced by positive breastfeeding messages on social media (Jin et al., 2015).

In addition, the reported intended breastfeeding durations in this study are higher than the average breastfeeding durations in the United States. Future studies should also measure any changes in intended breastfeeding duration over time for mothers who participate in Facebook breastfeeding support groups, in addition to measuring final breastfeeding duration. Furthermore, this study examined one potential model in which Facebook support may lead to breastfeeding outcomes. Researchers should consider alternative models that test different pathways and also consider the amount of exposure to breastfeeding messages and images within the support groups.

Finally, the popularity of one of the Facebook groups, indicated by over 25,000 members in the group, may have also influenced the results of this study. In a study by Jin et al. (2015), researchers created simulated breastfeeding pages on Facebook with varying levels of popularity. The impact of different types of breastfeeding messages delivered by mothers and health experts and the popularity of the Facebook pages were compared with participants' breastfeeding attitudes and intentions. The results from a two-way ANOVA found that very popular Facebook pages that incorporated testimonial messages from mothers, or messages that were a mix of

testimony and information, were viewed as more persuasive than the same types of messages delivered on less popular pages. Popularity of a page was operationalized by quantitative measures, such as the number of page likes. In the current study, differences in independent and dependent variables, based on the size or popularity of the Facebook group was not assessed. Future studies examining Facebook support groups should examine these factors as well, as less active Facebook groups may have differing effects on breastfeeding outcomes than more active or popular groups.

Limitations

This study used convenience sampling, which may have introduced selection bias among the survey participants. The non-random sample also limits the generalizability of these findings. Furthermore, the cross-sectional study design and correlational analysis restricts the ability to claim causation within the results. As described in the previous section, longitudinal studies should be conducted to observe any changes in the treatment and outcome variables overtime. In addition, participants in this study may have had other sources of breastfeeding support outside of the five categories measured in this study, which could have impacted the score calculated for non-Facebook support. Due to the overlap in other support sources listed by participants with previously defined categories within the survey, the "other" category of support was not included in the score for non-Facebook support. The five support categories included in the survey, however, are common sources of breastfeeding support, as described by mothers (McCarter-Spaulding, 2012). Finally, as mentioned before, the scale used to measure the dimensions of social support within this study did not include informational support. The omission of this type of support limits the ability to compare the results from the scale to other studies examining the types of support people experience within social media.

Conclusion

The use of social media support groups for breastfeeding mothers provides alternative methods to receiving breastfeeding support to overcome challenges. African American mothers in this study reported a greater amount of support for breastfeeding within their Facebook support group, in comparison to their other sources of breastfeeding support. Facebook groups, therefore, may compensate for lower amounts of support received in other settings and may also be used to support mothers in breastfeeding long-term. Facebook support was significantly correlated with intended breastfeeding duration in this study. However, it was not significant in the final regression model. More research is needed to determine the impact of support received through Facebook on breastfeeding outcomes.

While the psychosocial variables were not found to be moderators between the relationship of Facebook support and intended breastfeeding duration, self-efficacy and breastfeeding attitudes were significant predictors of intended breastfeeding duration for mothers in the breastfeeding support groups on Facebook. Longitudinal studies are needed to better understand how Facebook peer support groups impact breastfeeding intentions and ultimately how long mothers breastfeed.

CHAPTER 5

IT TAKES AN E-VILLAGE: SUPPORTING BLACK MOTHERS IN SUSTAINING BREASTFEEDING THROUGH FACEBOOK COMMUNITIES FOR BREASTFEEDING SUPPORT[2]

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Abstract

Breastfeeding is recognized as the preferred source for infant nutrition. However, breastfeeding rates among African American mothers remain significantly lower than the national average. The decrease in breastfeeding among African American mothers at six months suggests the need for more targeted support to sustain breastfeeding. The popularity of and use of social network sites to connect individuals and expand social networks has broad implications for public heath, including its use for communicating support for health promoting behaviors, like breastfeeding. Yet, few studies examine the use of social network sites for providing mothers with breastfeeding support, despite their reported use of social network sites to access support. Guided by Black Feminist Thought and an integrated model of behavior prediction, this study examined the experiences of African American mothers who participate in breastfeeding support groups on Facebook and their breastfeeding decisions and practices. The principal investigator conducted four online focus groups, as part of a larger mixed-methods study, with African American mothers who participate in breastfeeding support groups for Black mothers on Facebook. Thematic analysis was used to develop seven themes, including "Community for Black Mothers," "Empowerment of Self and Others," and "Shifts in Breastfeeding Perceptions and Decisions." Receiving peer support for breastfeeding within social media groups may lead to longer breastfeeding duration among African American mothers by helping mothers to overcome breastfeeding challenges, by providing ongoing support from women with shared experiences, and by providing exposure to other Black mothers who are breastfeeding, which further normalizes the behavior.

INDEX WORDS: Breastfeeding; Social Media; Social Network Sites; Black Feminist Thought; Qualitative Research; Lactation Support; African American Mothers

Introduction and Literature Review

While there are a number of factors that contribute to the morbidities and mortalities of Black women and infants, breastfeeding is recognized as a protective factor against numerous adverse outcomes that African Americans are disproportionately affected by including, breast and ovarian cancer, Sudden Infant Death Syndrome (SIDS), diabetes, asthma, childhood obesity, and gastrointestinal infections (Anstey, Chen, Elam-Evans, Perrine, 2017; Bartick, Stuebe, Schwarz, Luongo, Reinhold, Foster, 2013; Pediatrics, 2012; Reeves & Woods-Giscombe, 2015). Although breastfeeding rates have increased overall in the U.S., the rates of breastfeeding among African American mothers remains significantly below the national average. The gap between breastfeeding initiation between Black and White infants born between 2010 and 2013 was 17.4% (Anstey et al., 2017).) From 2011 to 2015, the national prevalence of breastfeeding initiation in the U.S. was 79.2%, with 20.0% of infants breastfed exclusively through six months, and 27.8% of infants breastfed at 12 months. For the same period, 64.3% of non-Hispanic Black infants initiated breastfeeding, with 14.1% breastfed exclusively at six months, and 17.1% breastfed at 12 months. Overall, breastfeeding rates among Black infants were significantly lower than White infants in 22 states (Anstey et al., 2017).

While any breastfeeding is beneficial, policy statements on breastfeeding by the American Academy of Pediatrics empirical findings summarize the dose-response relationship between breastfeeding duration and health outcomes (Bartick et al., 2013; Pediatrics, 2012; Thompson et al., 2017). The decrease in breastfeeding rates among all mothers, and particularly African American mothers at six months, suggests that African American mothers may need more targeted support to sustain breastfeeding. It is therefore important to ensure that mothers

are not only encouraged to initiate breastfeeding, but are provided with resources, information, and support to sustain breastfeeding for as long as they desire.

Common breastfeeding barriers for African American mothers include socio-cultural norms and attitudes, embarrassment with public breastfeeding, returning to work, self-efficacy, apathy and lack of support among health care providers, as well as, the lack of social support from family, peers, and work places (Johnson, Kirk, Rosenblum, & Muzik, 2015; Reeves & Woods-Giscombe, 2015). Social support is commonly classified across the literature into the following categories: emotional support (showing empathy, trust, and concern), informational support (offering information, providing instructions, and advice), instrumental support (tangible and practical assistance and can include helping with tasks, providing monetary support, and devoting time), and appraisal support (providing encouragement and affirmation through feedback) (Grassley, 2010; House, 1981). Cutrona and Suhr (1992) also identify informational, emotional, and tangible (instrumental) support as dimensions of social support. In addition, esteem support, which shows regard for an individual's skill, abilities, intrinsic value and network support, which provides structural connections with others, rather than emotional connections are identified (Hether, Murphy, & Valente, 2016). Historically, literature reviews on breastfeeding support have primarily focused on support delivered in person or by phone (Britton, McCormick, Renfrew, Wade, & King, 2012). Social network sites, like Facebook, however, provide another mode for delivering social support to breastfeeding African American mothers and is less examined in the literature.

Social media is defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content." (Kaplan & Haenlein 2010, p.61). The use of social media and social

network sites, specifically, to deliver social support have been examined for implications for public health practice (Audelo, 2014; Bridges, 2016; McDaniel, Coyne, & Holmes, 2012; Meng, Martinez, Holmstrom, Chung, & Cox, 2017). However, few studies examine the use of social network sites specifically in providing breastfeeding support for mothers, despite the popularity and reported use of social network sites to gain support among this population (Asiodu, Waters, Dailey, Lee, & Lyndon, 2015; Bridges, 2016; Duggan, 2015; Niela-Vilen, Axelin, Melender, & Salantera, 2015)**.** Among studies examining social media and the Internet more broadly for breastfeeding support, most studies focused on blogs and various online forums for mothers. Facebook is the most popular social media platform (Duggan, Lenhart, Lampe, & Ellison, 2015), yet few studies examined the use of Facebook, specifically, to provide and receive support among mothers (Giglia, Cox, Zhao, & Binns, 2015; Lau, Htun, Tam, & Klainin-Yobas, 2016; Logsdon, Bennett, & Crutzen, 2014; Newby, Brodribb, Ware, & Davies, 2015).

Bridges (2016) conducted a netnography exploring how breastfeeding mothers experienced support within three closed breastfeeding support Facebook groups associated with the Australian Breastfeeding Association. Observations along with online in-depth interviews (n = 3) and online focus groups (n = 17) were conducted with the program administrators and participants, respectively. An overarching theme of support was identified through thematic analysis. Four sub-themes described the nature of support experienced by participants in the Facebook groups and included community, complementary, immediate, and information. Other studies suggest that for breastfeeding mothers, online support groups through Facebook may be a more convenient and preferred source for accessing information and support, in comparison to other online platforms (Bridges, 2016; Asiodu, 2016; Niela-Vilen, et al., 2016). Among studies conducted with African American breastfeeding mothers, participants discussed

their use of social media to gain support, in addition to, overcoming social isolation (Asiodu et al., 2015; Kim, Fiese & Donovan, 2017). Absent from studies examining breastfeeding support through Facebook, are studies that seek to understand the mothers' experience within these communities, perception of support received on these sites, and how it relates to breastfeeding decisions. Furthermore, considering the unique influence of socio-cultural norms that influence breastfeeding outcomes among African American women, it is also important that research specifically highlight the experience of African American mothers who engage in these sites for breastfeeding support.

The purpose of this study therefore was to examine the experiences of African American mothers who participate in breastfeeding support groups on Facebook. This study also examined the types of support African American mothers receive in these settings and explored breastfeeding related outcomes. More specifically, this study explored the following:

- Aim 1: Experiences of African American mothers who participate in breastfeeding support groups on Facebook
- Aim 2: Types of support received by African American mothers who participate in online breastfeeding support groups
- Aim 3: Breastfeeding decisions, practices, and psychosocial outcomes for mothers who participate in breastfeeding support groups on Facebook

Methods

Design

This qualitative study is part of a larger sequential mixed-methods study. Qualitative data was collected during the second phase of data collection and were gathered through four online focus groups. In general, three to five focus groups on a topic are suggested to ensure findings

are not solely due to the characteristics of a particular group (Kleiber, 2004). A standardized open-ended interview approach, in combination with, the interview guide approach, guided the creation of the focus group protocol (Patton, 2015) (Appendix F.). The focus group questions were designed to contextualize the experience of the mothers who participate in Facebook breastfeeding support groups. The questions examined topics that were part of the behavioral model for the study and additional topics related to experience, such as the advantages and disadvantages of using social network sites to provide breastfeeding support and recommendations for developing online breastfeeding support groups for African American mothers in the future.

The development of the protocol was an iterative process that involved four phases of development, pretesting, and piloting (Castillo-Montoya, 2016). During this process, feedback was solicited from subject matter experts, peer researchers studying qualitative methodology, and African American mothers. During the final phase, three online pilot interviews were conducted with three African American mothers to determine the most suitable platform for conducting the online focus groups. After each round of pretesting and piloting, feedback was summarized and incorporated into further revisions of the protocol. This study was approved by the Human Subject Institutional Review Board at a southeastern university.

Theoretical Frameworks

Research findings have demonstrated the relationship between breastfeeding attitudes, breastfeeding self-efficacy, and breastfeeding norms on breastfeeding decisions as well as the importance of receiving breastfeeding support (Gross, Powell, Anderson, Hall, Davis & Hilyard, 2015; Johnson et al., 2015; Kim et al. 2017; McCarter-Spaulding & Gore, 2012; Spencer, Wambach, & Domain, 2015; Srinivas, Benson, Worley, & Schulte, 2014). The Theory of

Planned Behavior, which measures attitudes, perceived behavior control, and subjective norms is one theory of health behavior that has been applied across studies measuring breastfeeding intentions and behaviors. This research study was guided by behavioral model adapted from Fishbein's and Ajzen integrative model of behavior prediction (IMBP), which integrates the Theory of Planned Behavior (TPB), the Theory of Reasoned Action (TRA) and draws constructs from other theories, such as Social Cognitive Theory (Montano, 2015). Similar to TPB and TRA, a basic premise of IMBP is that intention is the strongest determinant of behavior. Breastfeeding intention, or intended breastfeeding duration, is significantly related to actual breastfeeding duration and may be modified by a mother's early postpartum experiences (Swanson & Power, 2005). The IMBP conceptual model was applied to the analysis of attitudes, perceived breastfeeding norms, and self-efficacy within the quantitative methods for this study and considered when developing the questions for the focus groups and coding during analysis. Furthermore, Black Feminist Thought provided the primary lens for guiding qualitative data collection and analysis. The epistemology of Black Feminist Thought involves assessing truths that are widely accepted among African American women. These truths are based on collective experience and worldviews, sustained based on the history of Black women within American society (Collins, 2000). By using Black Feminist Thought as the theoretical framework for this qualitative study, the unique perspectives of African American women were presented in a way that focused on their experiences as the criteria of meaning. Black Feminist Thought provided a framework for exploring the intersections of race, class, and gender within the breastfeeding experiences of Black women, as reflected in their experiences within the online support groups. Within this study, the theory was also applied to highlighting aspects of the theory, such as

counter-narratives and self-identity, social activism, empowerment and resistance, as appropriate.

Sample and Recruitment

The target population for this research study was first-time, self-identifying African American mothers who participated in breastfeeding support groups on Facebook. Mothers had to be at least 18 years old and breastfeeding at the time of data collection. To maximize recruitment for this study, the principal investigator first searched Facebook for breastfeeding support groups for Black mothers. Participants were recruited from six Facebook groups with group members ranging from 104 to 26,000 at the time of data collection. Each Facebook group aimed to promote breastfeeding and to provide Black mothers with breastfeeding support. The principal investigator joined each group and was either granted permission to post about the study or the administrator posted the information directly. The post included an overview of the study and a link to complete the survey. At the end of the survey participants were asked if they were interested in participating in an online focus group to discuss their experience within the Facebook support group further. Mothers who were interested in focus groups completed an additional form with their contact information. Information about the study was also posted within three additional Facebook groups and Instagram pages that promote breastfeeding.

Patton (2015) notes that mixed sampling is at the core of mixed methods research. To minimize threats to validity and increase generalizability, the principal investigator used stratified purposive, or mixed methods, sampling to identify a diverse group of mothers to participate in the online focus groups (Patton, 2015). Descriptive analysis across participant demographics from the survey guided the selection of focus group participants. Characteristics that were considered included age, education, income, and length of time breastfeeding.

Considering that the breastfeeding support groups represented mothers from across the United States, participants were selected from diverse geographic locations. As the population with lower rates of breastfeeding and more active participation in social network sites, two of the four focus groups included mothers ages 18-29. In addition, to illuminate the experience of new mothers across various stages postpartum, two of the groups only included mothers within the first six months postpartum. Potential focus group participants were emailed by the principal investigator and provided with additional information about the purpose of the focus group and the consent form.

Data Collection – Focus Groups

In feminist research, focus groups help to ensure the voices of the participants are the criteria of meaning. When conducting research with historically marginalized populations, like women of color, focus groups may also balance power differences between the participants and the principal investigator, while creating a space where participants can develop culture together (Johnson-Bailey, 2004; Patton, 2015). Participants, through their interactions and dialogue, participate in the co-construction of their experience (Wilkinson, 1998).

Focus groups were scheduled at times that were convenient for the majority of participants within a group, often during the evening or on the weekend to accommodate participants' schedules. Each focus group was conducted online using the video and web conferencing platform Zoom. A total of four online focus groups were conducted during September 2017, each lasting 60 to 90 minutes. The principal investigator moderated each focus group, which consisted of 5-6 participants in each group. A note taker, a graduate student in qualitative evaluation, was also present. During the focus groups, the moderator maintained an empathetic, yet neutral position (Patton, 2015). At the end of each focus group, the principal

investigator discussed key themes with focus group participants and the note taker. There were no new themes introduced by the fourth focus group suggesting data saturation was reached. All focus groups were video, and audio recorded and transcribed verbatim.

Data Analysis

Focus group transcripts were uploaded into NVivo 11 Pro for analysis. The names of focus group participants were replaced with pseudonyms to protect their identities. In analyzing the focus group data, categorization strategies, specifically using coding and thematic analysis were used to analyze the focus group transcripts (Maxwell, 2013). Thematic analysis is a process for identifying, analyzing, and reporting themes and generally includes assigning codes to data, annotating inferences about the data, sorting data into similar and contrasting patterns, and incorporating patterns into themes (Braun & Clarke, 2006). The thematic analysis was conducted by following the systematic approach outlined by Braun and Clarke (2006) and was also conducted within an essentialist realist paradigm, which aligned with the research questions and theoretical framework for this study.

The analysis began with becoming familiar with the data by reading through transcripts and creating notes to highlight initial ideas and interesting aspects of the data. Notes taken during the focus groups were also reviewed and incorporated into memos, when they provided interesting insights into the focus group themes or participant dynamics. The principal investigator then created nodes in NVivo to code transcripts. Inductive and deductive approaches were used, but the analysis was led by a theoretical, or deductive approach, where Black Feminist Thought and research questions were used to guide coding. Cutrona and Suhr's Social Support Behavior Codes were used to code the types of social support expressed by the mothers, according to the following categories of support: informational, instrumental/tangible, esteem,

network, and emotional (Cutrona, 1992). Similar to the scale adapted from Oh, Lauckner, Boehmer, Fewins-Bliss, & Li (2013) in measuring social support on Facebook, appraisal support was also measured. Following the completion of one round of coding across each transcript, a second round of coding was conducted by the principal investigator to check for new codes that were added across transcripts and to finalize the codebook.

The interpretative analysis began in the next phase of the analysis, which Braun and Clarke (2006) refer to as, searching for themes. This process involved organizing codes into potential themes, as well as, all the corresponding text for each code. Thematic mapping was used to visualize codes in relation to each theme. Aspects of data that did not fit within themes were moved into newly developed themes. At the second level, validity of themes was considered in relation to the entire dataset. Themes were then named and defined by organizing the data extracts from each theme into a coherent account that captured the core of each theme (Braun & Clarke, 2006). The principal investigator further developed analytical concepts, which included the following information for each theme: definition, characteristics, a propositional statement, illustrative examples using participant quotes, and negative cases.

Trustworthiness and Authenticity

The principal investigator developed several processes to improve the validity of data collection and credibility of findings. As described, a review of emergent themes, as a form of member reflections, was conducted with participants and the note taker at the end of each focus group. The principal investigator also invited focus group participants to review themes and provide feedback on the draft report. Including participants in this process is important for ensuring that the findings are validated by the participants and member reflections increase the credibility of the study (Tracy, 2010). Finally, codes, themes, and the analytical concepts were

reviewed by a PhD level researcher and breastfeeding subject matter expert who provided feedback as a method for establishing inter-rater reliability.

Results

A total of twenty-two mothers participated in the four online focus groups. Table 5.1 provides a description of each focus group while Table 2 provides a summary of participant demographics.

Table 5.1. *Focus Group Descriptions*

Focus Group	*Date*	*Description*	*Number of participants (N = 22)*
1	9/14/2017	Breastfeeding longer than 6 months, mixed income and education, 30 years old and older	6
2	9/16/2017	**Breastfeeding 6 months or shorter, mixed income and education, 30 years old and older	5
3	9/17/2017	Breastfeeding 6 months or shorter, mixed income and education, under 30 years old	6
4	9/19/2017	Breastfeeding longer than 6 months, mixed income and education, under 30 years old	5

***Two participants in focus group two were breastfeeding for 6 months when focus groups were scheduled but were breastfeeding for 7 months when the focus groups took place.*

Participants lived in 18 states with representation across each region of the United States (Table 5.2). The average participant age across all four focus groups was 30 years old. Thirteen participants were married or cohabitating with their partner. Participants' household income ranged from less than $10,000 per year to $150,000 per year or more. Breastfeeding duration ranged from 2 months to 23 months.

Table 5.2. *Focus Group Participant Characteristics*

Focus Group	*State*	*Participant Age*	*Breastfeeding Duration*	*Relationship Status*
1	New Jersey	32	8 months	Single
1	Indiana	31	8 months	Married
1	Louisiana	32	10 months	Married
1	Illinois	37	8 months	Single
1	North Carolina	39	23 months	Single
1	Texas	34	7 months	Married
2	Arizona	30	3 months	Single
2	Georgia	30	7 months	Married
2	Pennsylvania	31	4 months	Single
2	Virginia	37	6 months	Cohabitating
2	Maryland	40	7 months	Married
3	Arizona	22	4 months	Married
3	Oklahoma	22	3 months	Married
3	Ohio	28	6 months	Married
3	Michigan	28	6 months	Cohabitating
3	Tennessee	28	2 months	Married
3	Michigan	28	2 months	Single
4	Arkansas	27	17 months	Single
4	Ohio	27	11 months	Married
4	Tennessee	28	10 months	Cohabitating
4	Montana	28	17 months	Separated
4	Florida	25	18 months	Single

Through the thematic analysis of the focus group data, the principal investigator identified seven major themes: “Creating a Community for Black Mothers,” “Online Interactions and Levels of Engagement,” “Positive Aspects of Participating in Online Support Groups,” “Negative Aspects of Participating in Online Support Groups,” “ Classifications of Support Exchanged within Facebook Groups,” “Empowerment of Self and Others,” and “Shifts in Breastfeeding Perceptions and Decisions.”

Within the first research aim, the principal investigator sought to understand the experience of mothers who participate in Facebook groups for breastfeeding support. Four

themes were identified surrounding experience, including “Creating a Community for Black Mothers,” “Online Interactions and Levels of Engagement,” “Positive Aspects of Participating in Online Support Groups,” and “Negative Aspects of Participating in Online Support Groups.” These themes illustrate salient aspects of the mothers’ cyber support experience on Facebook, such as the importance of creating a space for Black mothers to support one another and patterns in group member participation.

Theme 1: Creating a Community for Black Mothers

Having a space created solely for Black mothers to provide each other with peer-to-peer breastfeeding support was a critical part of the experience of breastfeeding mothers who participated in this research study. The online communities for breastfeeding support created a space for mothers to receive support from women with shared experiences including race and experiences in motherhood. The desire for a shared experience that included similar experiences in motherhood and breastfeeding, as well as, shared race/culture, reflects the intersectional experience of Black mothers. The sentiment was expressed across participants, regardless of exposure to other cultures and races within their social networks. The following quotes explicate the desire mothers expressed to be in group specifically with participants that mirrored their experience as Black mothers.

> *I think, I think for me, it personally is, um, I liked it because the women look like me. As an African-American, uh, woman who grew up around Black people, but then also had the experiences in college around Caucasian people, um, I think it was, it's nice to see people who look like me doing what I wanna do.”* – Mina (Focus Group 3)
>
> *“There's just so many things as black women that we experience that can't be explained to other people who are not black women. So, just being around us and having that black*

girl joy is beautiful. So um, having just an inclusive group is definitely needed." -Kristen (Focus Group 2)

For participants in the focus groups whose in-person network did not reflect breastfeeding as the norm, participating in the Facebook support groups for Black mothers also provided a counter-narrative to mainstream beliefs about Black mothers and breastfeeding. As several participants described:

"It just opened my eyes to more black women breastfeeding. I never knew a black woman in my community that breastfed, that were, that were breastfeeding. And I'm around predominantly black people…So, when I got in the group, I was like, it's like 30,000 people in this group and they're all breastfeeding and they're all black and they're all moms, like, it was a, it just, it blew my mind." -Monique (Focus Group 4)

While not expressed by all participants, the significance of being in a support group for Black mothers was also tied to experiences of being "othered" or feeling like an outsider-within when participating in support groups of mixed demographics (Collins, 2000). There were six participants across three focus groups who discussed participating in breastfeeding support groups of mixed demographics. Four of the six participants described being made to feel different and sometimes being ignored within those communities. For these mothers, participating in the support groups for Black mothers provided a space for acceptance and community, in cases where mothers did not perceive the same receptiveness in other support groups. The quotes below illuminate this point.

"Like any, a lot of the other, like mostly Caucasian groups, they kind of, kind of ignored you. Cause like I noticed they'd respond to all the other Caucasian women, but I get mostly ignored."-Sonya (Focus Group 4).

> *"…and a lot of the times when you comment, or you make a post, they won't even comment. Somebody else can make the same post with the same problem and they will answer them, but they won't answer you. I've actually experienced that and I was like, "Really?""* – Aisha (Focus Group 4)

Aisha later added:

> *"So now it's like we're in a group where there's just us and the support is just, is just a great thing just to be with other women of color. It's just a different feeling."* -Aisha (Focus Group 4)

While not all women expressed experiences of being "othered" in these environments, the two participants who reported positive experiences in breastfeeding support groups with mixed demographics of mothers noted that they still desired to find a group of mothers that were Black and expanded on the importance of having the breastfeeding support group for Black mothers.

Theme 2: Online Interactions and Levels of Engagement

Participation in the online support groups ranged from less active to active participation. Less active participation included searching for previous posts by topic and reading current posts made by other participants to retrieve information. Active participation included asking questions within the group, answering questions posted by other group members, and making other types of posts, such as encouragement to other moms in the group.

Mothers most commonly reported answering questions posted by other mothers in group and searching the files/reading posts as their primary modes of participating in their group. Participants across each group described searching the files and scrolling through the Facebook page to read questions posted by other members of the group. Mothers expressed feeling as

though reading was an effective way to get new information and to get answers to questions because other mothers in the group had likely experienced similar issues.

Though mothers in each group reported answering questions, several participants in the focus groups with longer term breastfeeding moms (i.e. breastfeeding for over 6 months) described actively searching for questions to answer within the group, as a natural transition from being in the group over time and becoming more familiar with breastfeeding and breastfeeding information. The quotes below describe this shift in participation described by those participants.

> *"It, it's like um, when you get comfortable and you see the information as given you know, it's almost like you, you catch on. You start looking for posts, like I found myself up like two, three in the morning, scrolling down Facebook and like five uh, posts will come on my timeline, I'm like, "oh, oh, I know this one."* -Aisha (Focus Group 4)
>
> *"As a newer mom, I was posting more questions. Now, I'm posting more answers, because hey, I've asked this question, I know the answer."* -Jocelin (Focus Group 1)
>
> *"...if I open Facebook right now and I see a post, like, that with no answers, I'm going through my saved posts and I'm tagging, tagging whichever mama like, "Here ya go, the answer, so you ain't got to sit there and wait for hours."*-Maria (Focus Group 4)

Overall, mothers in the groups breastfeeding for six months or less also reported answering questions, but more so related to their own personal experience in breastfeeding. Posting questions was less commonly reported across each focus group, again with the emphasis on reading and searching the files to get information. Participants who reported posting questions were among the newer breastfeeding moms, in comparison to participants who had been breastfeeding for a longer duration. Among the mothers who described asking questions within

the group, questions were posted if they were uncommon or if they desired to get a variety of opinions on an issue.

> *"Um, but I tend to mainly read ... you learn, I learn mostly from the group by reading responses to other people's questions."* -Christina (Focus Group 2).

This participant later added the following:

> *"So I'll ask questions if it's not very common or if it's something that, you know, will help other people because it's not a very commonly asked question. So, I've asked a couple of questions where I think I asked something like about food allergies and something like that."* -Christina (Focus Group 2)

Theme 3: Positive Aspects of Participating in Online Support Groups

Another theme related to the experience of mothers was the perceived positive aspects of participating in a Facebook group for breastfeeding support. Participants across each group emphasized the importance of having access to evidence-based information, through searching files or through other group members or moderators' posts. Similarly access to a large range of opinions was also reported as an advantage, along with the convenience and accessibility of Facebook. The quotes below, illuminate these points:

> *"…the moderators, it's okay, okay, these aren't just like laypeople-just, you know, got an opinion, and just got something to say and wanted to do a group. You know. There's some, um, there's some credentials behind that, there's some experience behind it."* -Nailah (Focus Group 1)

> *"Um, one of the advantages for me is that I always have different opinions, you know, at my fingertips, which is, uh, good for me, because you get a lot of different perspectives."* -Morgan (Focus Group 2)

> *"Yeah, I was going to say the same thing, that there's, there's always somebody there, 24/7. So regardless of what time you need a question answered, or you just want to know that somebody's been through the same thing that you've been through, there's always somebody there, and it's always positive."*-Shamika (Focus Group 1)

Theme 4: Negative Aspects of Participating in Online Support Groups

Some participants described the non-judgmental feedback and constructive criticism within their experience as part of the advantages and valued aspects of their support group. On the other hand, the disadvantages included comments that were perceived as having a "harsh" or negative tone, which sometimes led to heated exchanges between the participants. Experience with negative feedback was expressed almost completely by mothers in the groups with infants six months and younger (groups 2 and 3), or about the newer moms within the support group. Several mothers expressed that the perceived negative tone of some participants in responding to mothers' questions, deterred them from posting questions. As one participant noted,

> *"Because I don't want you know, to get any pushback or, you know, "Read the um, use the search function." You know, I don't want to get called out".* -Christina (Focus Group 2)

In addition, the inability to understand the tone of remarks was acknowledged as a disadvantage across text-based communications. Two participants elaborated on how the tone, even if not intended as such, could be discouraging for mothers who are in a vulnerable state, as new mothers, and asking questions about potentially sensitive issues. As described by one mother who had been breastfeeding twins for six months:

> *"Because it definitely, you know, and it is hard, because when everything's online, you can't, you don't know the tone that people are talking in, so it's easy, especially for a*

topic that I'm sensitive about, which is breastfeeding, it's easy to like, if somebody says, types something the wrong way, it's easy for me to, you know, read it in my head as if they had a attitude with it or trying to be smart with it, or something." -Asha (Focus Group 3)

"I think sometimes conversations can get a little heated. And um, I think they're a little harsh at times for people who may be, are not using the search feature or asking a very commonly, a common question and people just kinda pounce on them. So, I think people may get discouraged." -Christina (Focus Group 2)

Less commonly mentioned as disadvantages were the lack of network support afforded within online settings, and confidentiality issues. Confidentiality issues were noted in one group by two participants who had friends and family who were also members of their breastfeeding support group. Participants, overall, regarded their experiences as positive and offered suggestions to improve the experience of Black mothers who participate in online support groups. According to the participants in this study, the experience of Black mothers who participate in online networks can improve on the individual level, by participants keeping an open mind to accepting the advice offered and by mothers showing more sensitivity in the way responses are written. On a technology level, the experience of mothers can be improved by incorporating ways to sort large groups according to demographics, like mother's age, age of infant, and location, as well as, by incorporating opportunities for mothers to connect with each other in-person.

The following section discusses the theme related to the types of support participants exchanged within the Facebook groups based on the typologies of social support used to guide this aspect of the analysis.

Theme 5: Classifications of Support Exchanged within Facebook Groups

Types of support reported by the participants were coded according to the following categories of support: network, informational, instrumental, esteem, appraisal, emotional. Mothers expressed seeking and receiving a variety of types of support. Informational support was most commonly discussed as the type of support mothers sought and received from other members in their group, followed by emotional support. Participants also expressed seeking and receiving esteem support and appraisal support. The following quotes demonstrate the types of support women were seeking when they joined the group.

> *"Um, I was looking for information. I knew nothing. I knew it was something I wanted to do, but I, I didn't even know where to start. So, I needed someone, preferably someone that has been there, done it before, that can provide some, um, insight into how it's done, how to start, what to do, how to keep going, um, how it all works."* -Nailah (Focus Group 1)

> *"I think mine was more, um, uh, reassurance that I was doing things all right, and nothing was wrong with me… so I felt like, um, they gave me the reassurance that you can get on there any time, day or night…"*– Jocelin (Focus Group 1)

Instrumental and network support were requested and received to a lesser extent within the Facebook groups. Furthermore, participants reported that the support they received from their groups provided the information and encouragement to combat negative support, overcome breastfeeding challenges, and to continue breastfeeding. The following quotes illustrate these points.

"Momma would even tell me, "Oh, she's crying. Give her some formula to thicken up that milk". So, all these myths, I mean I would have believed that it was true. I didn't know otherwise. But thanks to this group, that's a bunch of nonsense." -Nailah (Focus Group 1)

"She had trouble latching at first, and so I felt very overwhelmed and um, very uneducated on like, "How do I get her to latch? Why is she not latching?" And so, just that support on like, "Keep trying. Keep nursing. You got it," was very encouraging to help push us through to this point." – Kristen (Focus Group 2)

"I kind of wanted the same energy and like power that I got from my mama and grandma to just put cereal in the bottle. That's like the same force that I wanted to continue to encourage to breast feed and I was able to find that in groups." – Maria (Focus Group 4)

In examining the breastfeeding decisions, practices, and psychosocial outcomes for mothers who participated in the Facebook support groups, several themes were identified related to empowerment, a shift in breastfeeding perceptions, and ultimately a shift in breastfeeding decisions, relating to intended duration. These themes are described in detail in the section below.

Theme 6: Empowerment of Self and Others

Participants described feeling more confident and empowered in their decisions to breastfeed because of participating in their support group. "Empowerment" was not a term initiated by the principal investigator, but it was used by participants in three of the four focus groups when describing the impact of the group, specifically focus groups 1 through 3. Participants expressed feeling empowered in their decision to breastfeed, including how long they decided to breastfeed, as well as empowered to breastfeed in public. The images of breastfeeding mothers in the group played an important role in empowering participants to

breastfeed in public. Seeing the number of Black breastfeeding mothers within the group was also described as empowering. The quotes below illustrate the use of the term, “empowerment”, by participants.

> *“The group is very empowering. Again, for someone who doesn't really have people around her who's necessarily breastfeeding. I think finding other women of African-American background breastfeeding has been very empowering for me and encouraging. So, I would, would venture say that it's been an encouraging experience for me to see the number of women who look like me who are doing the same thing I'm doing.”*-Mina (Focus Group 3)

> *“I was going to say, um, em, when you first asked the question, empowerment was the first word that came to mind for me as well. Um, and mine was more empowerment to, to feel more comfortable nursing in any situation.”* -Sade (Focus Group 1)

Although participants in Focus group 4 did not use the word empowering explicitly, several participants expressed that being in their support group provided them with more “confidence” to defend their breastfeeding decisions, especially decisions regarding breastfeeding duration. As one participant stated,

> *“Like it really, it really gave me that confidence to really like those people that are still saying, "oh, you're still breast feeding?" Like it gives me that confidence to be like, "yes, yes we are and I'm going to whip it out right in front of you cause I don't care." -Taylor (Focus Group 4)*

Mothers who joined the group with strong intentions to breastfeed (prior-pro-breastfeeding) and mothers, who through the group described feeling more empowered in their breastfeeding journeys, both expressed their desire to encourage and empower other Black mothers in

breastfeeding. Coded as “community activism”, examples of community activism manifested across each focus group and can be described on the following levels:

Level 1: Within the group activism, such as adding other Black mothers to the group

Level 2: Sharing information about breastfeeding outside of the group and within social networks, e.g. “spreading the word” about breastfeeding

Level 3: Becoming a licensed lactation counselor or starting another support group for breastfeeding mothers

At level three, several mothers described their actions to support other Black mothers in breastfeeding, specifically by becoming licensed lactation professionals or developing their own support groups. One participant described how she was inspired to advocate for breastfeeding, as a result of, participating in her group.

> *“Because it's important to see women that look like us doing this stuff. Marrying that up with what I learned in the, in the class that I took for the CLC. So, yeah, I, this would have been a done deal, and I wouldn't be this advocate, I wouldn't be posting breastfeeding on my Facebook page, I wouldn't be going to support groups if it wasn't for the group.”* -Nailah (Focus Group 1)

Though this level of activism was primarily described within the groups of mothers breastfeeding for longer than six months, one participant in Focus Group 3 noted her observation of women inspired to become licensed professionals as well.

> *“Um, actually what hasn’t been mentioned, I was surprised that the number of people who, they were empowered to a point that they were interested in becoming you know, lactation consultants.”* -Mina (Focus Group 3)

Theme 7: Shifts in Breastfeeding Perceptions and Decisions

Mothers across each focus group commonly described the positive impact participating in the Facebook group had on their breastfeeding duration. In the focus groups with mothers who had been breastfeeding for longer than six months, several described how participating in the group was critical to overcoming early challenges they experience in breastfeeding or how participating in the group led to their decision to breastfeed longer, due to the exposure to mothers who were breastfeeding for longer than their initial goal. Similarly, mothers who had been breastfeeding for six months or less also described extending their intended breastfeeding duration, because of participating in the group.

> *"Um, just being in the group and seeing how long people breastfed their babies, until they're two and three, it totally shocked me 'cause I'm like, I'm stopping when he turns one. I'm stopping when he gets teeth, what if he bite, it hurt, no…But I'm like, I'm just gonna go until he feels like he's ready. Now I'm like okay, I won't look so weird breastfeeding a two-year-old."* -Brittany (Focus Group 3)

> *"So it kind of turned into, at first it was like okay, I want to breastfeed for at least a year cause I know that's like real beneficial. And now it's, okay, I want to touch two years. So like right now, my span point is I want to reach two years and then we'll go from like, go from there."* -Maria (Focus Group 4)

> *"Well I was going to say for myself, I honestly wanted to start weening her, probably a few months ago, or, well, you know, at least after, right after the first year. And the group basically built, helped build my confidence to keep going, seeing that there were other mothers who have breastfed for as long as I have, or even (laugh) years longer than what I'm, I'm doing now."* -Jennifer (Focus Group 1)

A second outcome related to breastfeeding decisions relates to breastfeeding in public. As a result of seeing breastfeeding photos posted within the group, termed “brealfies”, and reading posts on public breastfeeding, mothers across each group also commonly described feeling more comfortable and confident with public breastfeeding. Mothers who entered the group with strong positive attitudes about breastfeeding also reported shifts in their comfort with public breastfeeding and/or extending their breastfeeding goal, as a result of participating in the group. The quote below illustrates the sentiment expressed by participants regarding the breastfeeding photos posted within the group and how they were encouraged to breastfeed in public.

> *“I, I feel the images are amazing. Um, they're so uplifting. There was one, um, that empowered me so much the other day. It was a woman breastfeeding her daughter at a restaurant, and today, I thought about that, and I've been thinking about it for days, and I went out today, and I did it, and I thought about her, and I felt like a rock star. I love the images. It makes it more ... I can't think of the word, but it encourages me more to wanna keep going.”* -Nicole (Focus Group 3)

Not all mothers expressed feeling comfortable breastfeeding in public, however. Though one mother expressed enjoying the pictures of other mothers breastfeeding in public, she also expressed feeling some discomfort with breastfeeding in public herself.

> *“Um, I do like how women are like, babies have to eat, so not being covered. I still struggle with that a bit. Um, but I do like to see that there are women out there who will just whip it out and they're just gonna do their thing. And I'm trying to get there. I'm just not quite there yet.”*-Michelle (Focus Group 2).

Discussion

To the principal investigator's knowledge, this study is the first study to examine the experiences of Black mothers who participate in Facebook groups for breastfeeding support and one of few studies to examine breastfeeding support through Facebook. The following section is arranged by the study aims.

Experience of Black Mothers in Facebook Breastfeeding Support Groups

When African American mothers create and participate in online support communities for Black mothers, it creates a space that disrupts the narrative of Black women and breastfeeding and fosters community and empowerment through images and discussions. The experience of mothers who participate in these groups counters stereotypical narratives and beliefs about African American mothers and breastfeeding and reaffirms the behavior of breastfeeding as normal among Black women. Like other participants, one participant emphasized why it is important to have groups like these for Black mothers.

"I think it's very important...especially because a lot of people, a lot of African-American people feel like Black women don't breastfeed. It's not what we do, it's a white woman thing." -Asha.

This finding is one of several findings in this study that correspond to Black Feminist Thought, specifically notions of self-definition and the importance of resisting controlling images as an important factor in self-definition (Collins, 2000). In addition, important aspects of the online supports included the convenience and accessibility to diverse opinions. This is consistent with other studies, which suggests that the immediate access to information from other mothers to meet unmet informational needs and to build skills for breastfeeding is a valuable aspect of using Facebook for breastfeeding support (Asiodu et al., 2015, Bridges, 2016; Niela-Vilen, 2016). Again, the shared experience of being in a group specifically with other Black

mothers who were also breastfeeding was particularly of value to the women in this study. It provided a space that did not reinforce the heteronormativity of whiteness and the marginalization of Black women, experience by some participants in other groups. However, this was not only emphasized by mothers who described what Collins (2000) terms the outsider-within, which corresponds to mothers in this study feeling "othered" in groups with other races of mothers, but also among mothers who had positive experiences in their other support groups. Participation and group interactions within these spaces was influenced by stage in breastfeeding, group dynamics, and culture (e.g. how a mother feels her response will be regarded), and rules regarding topics. The perceived tone of text-based communications, like in other studies, is a notable challenge of participating in support groups within online settings, which may be exacerbated by the vulnerability of new mothers expressing potentially sensitive information. Mothers within this study differed at times in how they interpreted the tone of group members within Facebook support groups. Some mothers perceived the tone of some responses within the group as displaying passion, while others perceived the tone as displaying "attitude" or harsh. In addition, one participant, expressed feeling that her group was non-judgmental, saying she "could ask anything". Then later expressed that she felt more comfortable asking personal questions in her in-person support group where she felt the women were less "pretentious" about asking questions.

In one focus group, participants asked about the tone of messages in other mom support groups. One participant added this comment about the perception of tone within support groups for Black mothers:

> *"I don't personally think that our group gets angry. I feel like black women are just headstrong. For the most part, we are just strong like, you know, the word is not coming*

> *to me, but I don't think that it's anger, I think that it's just our personalities. But in the other group that I'm in, and I'm only in one other group because I had to get myself out of them. They are sensitive. You make any comment ... So if you say, well I don't really get that or ... The whole Gatorade thing where they just chug Gatorade. I'm like, "I really don't think you should drink all that Gatorade. It's probably not healthy for you." They will like cut your head off. So I don't think, it's more opposite for me. I see it in their side. I think from us, I see it as passion. I don't see it as angry or like defense."* -Morgan (Focus Group 2).

The principal investigator's interpretation is that within this group discussion, participants were careful to not reinforce the stereotypical narratives of "Angry Black Women". The group came to the consensus that it may be "mom thing", displaying passion about motherhood, rather than a "Black mom thing" and something that is experienced across mom groups, in general. However, the inability to discern tone remains an issue across nonverbal forms of communication, in general. As participants suggested, extra consideration and sensitivity shown in how information is presented may help mitigate issues with tone and could encourage mothers to more freely post questions within a Facebook support group.

Types of Support Received

Like other studies on online support, informational support was exchanged considerably more than the other types of support examined within this study. The mothers also commonly reported emotional and esteem support, which are also commonly reported in online exchanges of support, as well as, studies examining peer support (West, Hanson, Thackeray, Barnes, Neuger, & McIntyre, 2011; Gray, 2013; Hether et al., 2016; Cowie, Hill, & Robinson, 2011). The results of this study suggest that a combination of different types of support, however, are

received within Facebook support groups and are important to breastfeeding mothers in these settings.

The findings from this study are consistent with previous studies which show the importance of receiving support from individuals who are identified as peers because of shared characteristics (CDC, 2013). The conversations of participants surrounding support received in these groups, versus support received in other settings, underscores the need and desire for Black mothers to be exposed to and supported by other Black mothers who are breastfeeding, as a critical part in their breastfeeding journey. These findings are also consistent with other studies, in which breastfeeding African American mothers considered the support they received online to be an invaluable component of their breastfeeding experience (Asiodu et al., 2015).

Breastfeeding Decisions, Practices, and Psychosocial Outcomes

The overarching outcomes participants credited to participating in their groups were empowerment and shifts in breastfeeding beliefs and practices. Of note, the feelings of empowerment participants described because of participating in the Facebook groups, underscores the importance of imagery and exposing African American mothers to other Black mothers breastfeeding as an important part of normalizing breastfeeding and shifting culture norms. This is of significance since positive imagery of Black breastfeeding mothers is something mothers have noted in previous studies as lacking from the media (Asiodu et al., 2015). In addition, other researchers have cited the need to examine the impact of positive media on breastfeeding attitudes and beliefs, particularly among African American mothers (Johnson et al., 2015). This study therefore provides some insight into how positive images of breastfeeding mothers potentially shape norms and breastfeeding practices as well, e.g. breastfeeding in public. The findings from this study are also consistent with other studies in which mass media exposure

to breastfeeding campaigns and messages were associated with more positive breastfeeding norms, but is unique in that the exposure was specific to user-generated content on social media (Nguyen et al., 2013). Increased comfort with public breastfeeding is also a significant finding since, comfort with breastfeeding in public has been shown to predict breastfeeding duration (de Jager, Broadbent, Fuller-Tyszkiewicz, & Skouteris, 2014). Furthermore, self-efficacy to breastfeed is established in the literature as a strong predictor of breastfeeding intention as well (Brockway, Benzies, & Hayden, 2017; Johnson et al., 2015; McCarter-Spaulding, 2012; Reeves & Woods-Giscombe, 2015). The findings from this study suggest that within online settings of peer support, the confidence of breastfeeding mothers is improved and influences their breastfeeding intentions and behaviors.

Furthermore, the concept of community activism and empowering others, as a result of participating in their Facebook support groups, reflects the epistemology of Black Feminist Thought, where African American women create knowledge that fosters their empowerment and social justice (Collins, 2000). One of the tenets of Black Feminist Thought is that African American women resist oppression through activism within their community, which was manifested in participants' desire to inform and encourage other Black mothers about breastfeeding (Spencer et al., 2015). Once mothers received information within their online communities, several expressed the desire to advocate for breastfeeding to Black mothers, on some level, which at the higher end included creating their own support groups or become certified lactation professionals.

Secondly, participation in the groups and the support received influenced decisions on how long mothers planned to breastfeed and acceptance of long term breastfeeding among other mothers. Multiple participants referenced receiving support from mothers in earlier stages

postpartum to address breastfeeding challenges, including issues with latching, infant tongue ties, and returning to work, which suggests that the mothers in this study were receiving the support needed within their groups to continue breastfeeding. The online setting also provided constant exposure to breastfeeding mothers at various time points postpartum. It appears to be the combination of exposure, along with specific breastfeeding support received as issues arise, that led to the shift in intended breastfeeding duration. It is possible that the women within the breastfeeding group were already highly motivated to breastfeed, an indication of participating in a breastfeeding support group, and were more inclined to breastfeed longer. However, there were participants, as described in the results, who mentioned extending their breastfeeding goals because of participating in their group.

Implication for Future Studies

The present study provides a snap shot across various stages in breastfeeding. In the future, longitudinal studies with a cohort of mothers, followed from the time of joining the group through breastfeeding cessation, are needed. This will allow principal investigators to measure any changes in breastfeeding intentions and other breastfeeding outcomes (e.g. self-efficacy and attitudes) over time, as well as, actual breastfeeding duration. Studies that examine breastfeeding outcomes from groups of mothers who participate in in-person peer support groups, in comparison to, groups on social media, may also provide additional information on the impact of Facebook breastfeeding support groups.

In addition, this study specifically focused on support delivered through social network sites and not social media more broadly. Though findings from other research studies suggest that the use of blogs for social support among mothers was positively associated with study outcomes, this form of social media may be less popular among low-income mothers and

African American mothers, as suggested by the findings in the literature (Mitchell, Godoy, Shabazz, & Horn, 2014; Swindle, Ward, Whiteside-Mansell, Bokony & Pettit, 2014). The use of social media platforms or social network sites vary depending on demographics and should be considered in future research for breastfeeding support or interventions using social media.

Limitations

The principal investigator who moderated the focus groups has positive attitudes towards breastfeeding, which may have introduced researcher bias. The principal investigator took several steps to address this potential bias, including identifying negative cases within each theme, as they were present. The codes and themes were also reviewed by a PhD-level principal investigator in the field. As described, there were also several points of member checking, which was also used to validate research findings. Again, it is also possible that the women who participated in this study were highly motivated to breastfeed, which could have influenced the findings of this study, particularly related to breastfeeding decisions.

Conclusion

This study provides evidence on the use of Facebook to support breastfeeding among African American mothers. In addition, the findings provide information on the experience of African American mothers who participate in Facebook breastfeeding support groups, as articulated by women who participate in these groups. Outside of providing breastfeeding support, the study also provides information on the ways in which Facebook support groups positively influence breastfeeding norms, confidence in breastfeeding, and ultimately intended breastfeeding duration.

A variety of factors can lead to early breastfeeding cessation. While more than half of African American mothers initiate breastfeeding, there is a significant decline in breastfeeding at

six months (Anstey et al., 2017). Receiving peer support for breastfeeding within online social media groups may lead to longer breastfeeding duration for mothers by helping mothers to overcome breastfeeding challenges. Mothers are exposed to peers who are breastfeeding, are provided with various types of support to address breastfeeding questions and concerns and provided with encouragement from other Black mothers to continue their breastfeeding journeys.

CHAPTER 6

DISCUSSION

The purpose of this chapter is to present the methods and findings from the qualitative content analysis (QCA) and the integration of the findings across each qualitative and quantitative data collection source. This chapter also describes the limitations of this study, as well as implications for future research studies and practice within the field of public health.

Qualitative Content Analysis

The qualitative content analysis provided another source of data to assess the types of support received within Facebook groups for breastfeeding support. For feasibility purposes, one group was selected as the site for the qualitative content analysis. The largest Facebook group from which survey and focus group participants were recruited from served as the site for the qualitative content analysis. This group had over 30,000 group members when the qualitative content analysis was conducted. As the most active group, this page provided the largest sample of posts to analyze the types of support exchanged. As the largest group from which participants were recruited, the posts within this group also likely reflected the experience of the largest proportion of this study's participants.

Methodology

Qualitative content analysis is a descriptive method used for reducing data and summarizing concepts present within the data. QCA focuses on how the data relates to each other and how the data and categories relate to each other (Schreier, 2012). Unlike quantitative forms of content analysis, QCA is attentive to context and is at least partly driven by the data (Schreier, 2012).

Posts within the group were extracted over a 24-hour period to examine the solicitation of support within the group and the types of support participants received in response to their requests. For feasibility, the 24-hour time frame was utilized for this study due to the level of activity within the group, which has hundreds of posts made daily. The initial message posted in the group and the first 10 responses to the post were extracted. Pictures posted within the group were not extracted or included in the analysis. The process of data extraction was completed by copying each individual post from the group into an Excel file. The names of group members and the name of the group were omitted to protect the identity of participants in this community. The Excel file was converted into a pdf file and uploaded into NVivo 11 Pro for data analysis.

A systematic process, described by Schreier (2012) was followed to conduct the qualitative content analysis. A coding frame was deductively developed initially to classify the types of support requested and the types of support received, using the categories of social support previously defined within this dissertation: informational support, emotional support, appraisal support, esteem support, and network support. The unit of analysis was each initial post and the responses. The researcher completed a pilot round of testing with a subset of the data before finalizing the codebook. The pilot phase allowed the researcher to test the coding frame. The coded units were reviewed for consistency across the coding frame. Additional codes were also added during this phase to capture other nuances within the dataset, such as follow-up statements and follow-up questions posted in the group, as well as, posts that were unrelated to social support.

The focus group discussions provided further context to the types of comments posted within the groups as well. Therefore, comments relating to searching the group files for information and when the group moderators turned off comments to posts, which were topics

discussed during the focus groups, were also coded within the coding frame. Although a concept driven approach to the analysis was most appropriate for the research question and for comparison with other content analysis studies on social media support, within the final coding frame, categories were concept driven and data driven (Schreier, 2012). The principal investigator was the only coder for this dataset. Therefore, the reliability of the coding frame was assessed by completing one round of complete coding and then recoding the entire dataset ten days after the first round of coding, a process in qualitative content analysis described as comparison across points in time (Schreier, 2012). During this recoding phase, the researcher assessed any discrepancies between the two rounds of coding and a final decision on the codes was made.

Results

The results of the content analysis are presented in a text matrix (Table 6.1). There were 107 initial posts and 538 responses. Segments of the posts were included to further protect the identities of the support group members. Sociodemographic information or other characteristics are not collected within the Facebook group. However, within the posts included in the dataset, mothers commonly provided the age of their breastfed child. Based on the information provided within the posts, the mothers included in the dataset were breastfeeding children whose ages ranged from a few days old to 22 months old.

Table 6.1. *Results from Qualitative Content Analysis*

(Results from Qualitative Content Analysis of Breastfeeding Support Group on Facebook)

Category	*n*	*Description of Category*	*Example of Expression*
Support Solicited	73	Posts in group that are support seeking	
Informational	55	Seeking information, instructions, and advice	"Am I (breast)feeding too much and will the soreness decrease?"

Emotional	13	Seeking empathy, trust, and demonstrations of concern	"Had to supplement with the formula. I feel so defeated."
Esteem	2	Seeking affirmation of skill and abilities, as well as, intrinsic value	"Pumping takes away all my confidence in breastfeeding! How will I ever be able to pump enough when I go back to work?"
Appraisal	3	Seeking encouragement through affirmation and feedback	"My lo is debating with me about continuing to nurse. I gave in. She is not ready to stop."
Network	0	Seeking structural connections with others in the group	Not observed
Instrumental/ Tangible	0	Seeking tangible and practical assistance (e.g. helping with tasks, providing monetary support, and devoting time)	Not observed
Support Received		Posts in group that provide support	
Informational	184	Offering information, providing instructions, and advice	"At a month old the baby is okay to sleep longer stretches at night if they want to."
Emotional	91	Offering empathy, trust, and concern	"You're definitely not alone."
Esteem	17	Showing regard for an individual's skill and abilities, as well as, intrinsic value	"God created my body to be able to feed my child perfectly…I can do this. My milk is perfect for him. Yours is perfect for your baby too."
Appraisal	15	Providing encouragement through affirmation and feedback	"I'm proud of you! You are super woman!"
Network	0	Providing structural connections with others in the group	Not observed
Instrumental/ Tangible	0	Providing tangible and practical assistance (e.g. helping with tasks, providing	Not observed

		monetary support, and devoting time)	
Non-Support Posts	105	Posts unrelated to seeking and providing support	"I'm on week 3 of breastfeeding without supplementing with formula. I feel like superwoman!"
Follow-Up Questions	53	Questions posed by group members to gain additional information about another member's posts	"How old is baby?"
Follow-Up Statements	24	Statements made by group members to answer questions or provide updates to original posts	"This was posted last night and since she has started latching so hopefully this issue will be no longer!"

Within the study site, informational report was most commonly solicited by group members (n=55) and received in the responses from other mothers in the Facebook group (n=184). Informational support includes offering advice, information, and instructions and within the breastfeeding support group also included sharing links to resources on the Internet. Information was requested on a range of topics, including pumping and storing milk, increasing milk supply, cluster feeding, weaning, latching, pain during breastfeeding and engorgement, returning to work and providing milk at daycares, and medical issues (e.g. acid reflux and tongue ties among infants). In response to their request for information, mothers in the group provided advice based on their personal experiences or acquired knowledge about breastfeeding. The comments below provide examples of informational support received within the group:

"Baby is trying to signal a letdown and increase your supply. It's common for babies to get fussy in the evenings."

"Any insulated lunch bag will do. Breastmilk is good for several hours at room temp. You could add ice packs to cool them in the bag."

When responding to requests for breastfeeding information, there were a few references to searching the group files to read information on common topics previously discussed (e.g. cluster feeding).

Emotional support was the next common type of breastfeeding support solicited (n=13) and provided within the group posts (n=91). In soliciting emotional support, mothers commonly expressed their frustrations over breastfeeding challenges, with several mothers prefacing their messages by stating their "need to vent". The provision of emotional support includes showing empathy, trust, and concern. In response to requests, mothers offered sympathy, empathy, and understanding. One mother offered the following words of support to a mother who expressed her frustrations with pumping her milk.

"I think there are more people who understand and can relate to your post than you know. I just don't think we speak up because we may feel like we don't have sound advice."

Following informational and emotional support, esteem and appraisal were the next types of support commonly exchanged within the group. Esteem support shows regard for an individual's skill and abilities, as well as, intrinsic value. There were two comments seeking esteem support and 17 instances in which esteem support was provided. One mother described her doubt in her ability to pump enough breastmilk for her baby and concerns over her milk supply. She received multiple comments reassuring her ability to produce enough milk. The comment below illuminates this type of support displayed within the group.

"Normal pumping output is 1-4 ounces per session. If you're getting two ounces when pumping and exclusively nursing, that's actually great...There's NOTHING wrong with your supply."

Appraisal support, which includes providing encouragement through affirmation and feedback, was coded for within 15 comments provided by group members.

There were no examples of the posts within the dataset that demonstrated seeking or receiving instrumental support or network support. Outside of support, however, other comments in the group included follow up questions, follow up statements, and other non-support posts. Following an initial post, group members sometimes asked additional questions or expressed the need for more information before providing the mother with advice. Inquiring about the age of the baby, for example, was a common follow-up question. In addition, mothers made follow-up statements to their initial posts, answering additional questions or providing an update for group members. On the other hand, there were a large number of posts (n=105) that were not related to providing or seeking breastfeeding support. For example, mothers at times replied "Bump" which increased the activity on a post, and as a result, increased the visibility of the post within the group. This action is performed when participants believe a question is of significant interest or would be helpful for other mothers in the group. At other times mothers made posts that described a breastfeeding story or provided an update on their breastfeeding journey. The comments below provide examples of the posts in the group that were not related to seeking or providing breastfeeding support.

"Almost 17 months in and she still nurses. Cannot wait to get home to nursing."

> *"I love this group because I can relate. We speak the same languages (words and gifs!) lol. We come from the same cultures and backgrounds, so the things I've been through, am going through, and will go through, all you guys have experienced...I enjoy my local group but this group is awesome and I enjoy it a lot!"*

Another mother described her experience with breastfeeding in public, saying

> *"I never noticed I didn't cover up until we were in the middle of a feeding and at that point I said to myself why am I so concerned about what other people think…I don't*

believe I could've done that without the support of this page so I have to say thank you. You guys are the best!"

Finally, there were two instances where the moderators turned off the comments on a post, restricting further activity, which was also mentioned in the focus groups. One post was related to infant formula and this group does not provide recommendations for formula, as noted in the group rules. The other post was related to a frequently discussed topic, cluster feeding, and the mother was directed to use the search function to access previous posts on the topic.

Summary of Quantitative and Qualitative Findings

This dissertation explored the experience of African American mothers who participate in breastfeeding support groups for Black mothers on Facebook. This study also used an integrated model of behavior prediction to explore the relationship between breastfeeding support through Facebook and other sources and intended breastfeeding duration. The first research question evaluated the experience of African American mothers who participate in a social networking groups for breastfeeding support. The broad nature of this research question was intentional and allowed the researcher to draw from multiple data sources to answer the question. To understand the experience of African American mothers who participate in these communities, quantitative information on group participation provided the first layer of analysis. Most participants in the survey reported breastfeeding for nine months and on average reported joining their Facebook support group one year ago or less. Most survey respondents also reported checking the Facebook group at least once per day. The frequency of visiting the Facebook group, as well as, the duration of group membership compared to breastfeeding duration, suggests that the Facebook group is an important source of support throughout their breastfeeding journey.

Through participant discussions, the focus groups provided rich data on their experience in the group, as it related to their interactions within the group, reasons for joining the group, and the advantages of participating in a support group on Facebook. Mothers in the focus groups ranged from a few weeks to over a year post-partum, showing that the groups are used throughout various stages of the mothers' breastfeeding journeys. For participants in the focus groups, breastfeeding information was primarily gathered by reading through the posts and using the search tool to find information on specific topics previously discussed in the group. In addition to reading posts within the group, responding to posts was also a common way of engaging in the group and providing support to other mothers. For the focus group participants, Facebook served as a quick and convenient way of receiving evidence-based answers to questions and also gaining additional resources. These findings are consistent with other research studies which suggests Facebook is a preferred source of information for gaining support for mothers (Asiodu et al., 2015; Bridges, 2016; Niela-Vilen et al., 2016).

On the other hand, the most commonly reported disadvantage of participating in a Facebook support group was negative tone that mothers sometimes perceived from other mothers in the group when responding to questions. This was exclusively expressed in relation to newer mothers and when responding to commonly asked questions. While mothers explained that they could easily access the information they needed by searching the group files, and therefore used this mechanism as the primary way of gaining support, a few mothers described posting questions less frequently and searching for previous posts more often to avoid receiving negative feedback from other group members (or being told to search the group files).

A central part of the experience within these Facebook communities, as expressed by focus group participants, is participating in a community specifically created for Black mothers

who also share their experiences in motherhood and breastfeeding. Mothers across each group emphasized their desire to receive support and see other mothers breastfeeding who looked like them, as one of their reasons for joining the group and what they sought to gain from participating in this online environment. Furthermore, the conversations of participants surrounding support received in these groups, versus support received in other settings, underscores the desire of Black mothers to be exposed to and supported by other Black mothers who are breastfeeding, as a critical part in their breastfeeding journey. Literature on peer support describes the positive influence of peer support on normalizing behavior (Obeng & Emetu, 2015; Srinivas et al., 2014). The findings from this study demonstrate the positive impact of peer communities exclusively implemented online, which can vastly extend the number of support members within mothers' networks. Participants' experience was further viewed within the context of Black Feminist Theory, exploring constructs related to self-determination, community activism, and resistance (Collins, 2000). The stories and images of black mothers breastfeeding shared within the support groups constructed counter-narratives to stereotypical beliefs and controlling images of African American mothers and breastfeeding. The mothers, who felt empowered through their groups to take action, demonstrated varying levels of community activism in order to support and encourage other Black mothers in breastfeeding.

The second research question examined the types of support participants received through Facebook and the participants' sources of breastfeeding support outside of their Facebook group. The survey and qualitative content analysis provided a deductive approach to exploring this question, while discussions within the focus groups allowed for an inductive approach as well, as participants discussed their support seeking behaviors within the group and the types of support they received. Though survey respondents reported a variety of sources of

support, participants on average reported a higher amount of breastfeeding support from their Facebook group compared to network sources. Other studies with mothers who seek support online for breastfeeding also found that mothers sought additional support outside of their in-person networks (Asiodu et al., 2015; Bridges, 2016; Giglia, Cox, Zhao, & Binns, 2015). Though mothers may receive support outside of social media groups, the support received online may compensate for varying levels of support for breastfeeding received elsewhere, or the lack of breastfeeding support outside of these online groups. On average, survey participants reported high levels of breastfeeding support from their spouse or partner and medical providers as well. However, an interesting finding from the survey is that support from the mothers' spouse or partner was not significantly associated with intended breastfeeding duration. Previous studies have found spousal support for breastfeeding to be a significant factor in predicting breastfeeding outcomes (Mitchell-Box & Braun, 2013). The findings from this study do not suggest that spouses are not an important source of breastfeeding support. However, it could be that for mothers who participate in Facebook support groups, the support received within their group is a stronger predictor of breastfeeding intentions. The findings instead underscore the power and potential of a collective group of Black mothers to support each other in making a lasting impact on health behaviors.

Similar to other studies examining online support, the survey results suggest that emotional and esteem support were the most common types of support mothers received within their breastfeeding support group (Oh et al., 2013). Appraisal support was also commonly reported. However, informational support was not included in the Health-Related Social Support scale which was adapted for this study to measure Facebook support specifically for breastfeeding groups on Facebook. Since informational support is also commonly reported as a

type of support requested and received online, the omission of this dimension of the support is a limitation of the quantitative findings (Gray, 2013; Hether et al., 2016; West et al., 2011). The tool may be used in future studies measuring breastfeeding support in online communities with the addition of items to measure informational support. The qualitative content analysis and the focus group provide insight into the exchange of informational support.

Focus group participants most commonly described requesting and receiving informational support and emotional support, with esteem and appraisal support also commonly described. The focus group findings are again consistent across literature examining online settings of social support, as well as, and in studies of peer support (West et al., 2011; Gray, 2013; Hether et al., 2016; Cowie et al., 2011). Informational support was the most common type of support exchanged between mothers, as described by focus group participants with mothers also describing their need for additional information as their reason for joining the group. Focus group participants also described their outside sources of support. The findings from the focus groups suggests that mothers who participate in Facebook support groups for breastfeeding have varying levels of outside support, ranging from no additional support to receiving additional breastfeeding support from a variety of sources, most often including healthcare providers (e.g. Lactation Consultants, Douala's, WIC), their spouse or child's father (several women within each focus group), and other family members. To a lesser extent, mothers in the focus groups also received support from their mothers, other mom friends, and in-person peer support groups. When present, the other sources provided various types of support for breastfeeding, including tangible/instrumental support, information (more so from healthcare providers), and encouragement. Tangible support, however, was not commonly reported within the focus groups and not typically found within the literature on online support groups (Yuxia & Yuping, 2010) .

Mothers with or without outside sources of breastfeeding support utilized the Facebook groups to gain additional support. Again, sharing similar experiences with the mothers providing the support was a unifying concept expressed by mothers within each focus group and expressed in other studies with African American breastfeeding mothers (Kim et al., 2017)

The quantitative analysis of the theoretical model provided the foundation for answering the third research question. The final regression model, measuring the relationship between breastfeeding support through a Facebook peer group, the psychosocial variables within the study, and breastfeeding outcomes, failed to detect moderation between Facebook support and psychosocial factors relating to breastfeeding duration. However, self-efficacy and breastfeeding attitudes were significantly associated with intended breastfeeding duration. The importance of breastfeeding self-efficacy is not a determinant unique to African American mothers. However, improving low self-efficacy in this population is critical because of lower breastfeeding rates, higher risk for early breastfeeding cessation, and greater perceptions of breastfeeding barriers (Meedya et. al, 2010). The network support score for the Facebook group was significantly correlated with intended duration, however, suggesting that support received through Facebook groups may lead to longer breastfeeding durations among African American mothers. This is an important finding considering the drop in breastfeeding rates for African American mothers at six and 12 months.

Given the cross-sectional survey, the focus groups allowed the principal investigator to explore changes in breastfeeding decisions and outcomes over time, as described by participants. Among the outcomes expressed by participants in the focus groups were empowerment and an overall shift in breastfeeding beliefs. Mothers in the focus groups described how they became more empowered to breastfeed in public and how participating in their Facebook group increased

their acceptance of breastfeeding beyond one year. Self-empowerment and the desire to empower other Black mothers in breastfeeding, led to multiple examples of community activism, such as becoming a certified lactation counselor or consultant or developing other breastfeeding support groups for Black mothers. The images of other breastfeeding mothers, along with the information shared in the group, were critical aspects that led to empowerment. While the influence of imagery on cultural norms and behaviors has been described in other literature, less is known about the effect of positive imagery on breastfeeding decisions (Johnson et al. 2015). This provides some evidence to support the positive influence of breastfeeding images specifically posted on social media on a mother's decisions to breastfeed in public, and also intended breastfeeding duration.

Integration of Findings

Findings across each data collection source were compared for areas of convergence and divergence. Since qualitative and quantitative data were given equal weight, the voices of participants through the focus groups and through the content analysis were deemed as valid and credible as the survey findings. Although the experience of mothers was primarily assessed through the focus groups, the other data sources provided the opportunity to examine the results for similarities, differences, and other insights into their experience as well. For example, survey results showed that most mothers visited their Facebook group at least daily. The frequency of visiting the groups was consistent with the information shared by focus group participants. However, focus group participants further described patterns of participating in their Facebook groups, such as reading through posts, answering questions, and asking questions. Survey participants and focus group participants also represented a range of breastfeeding durations. Through the focus group discussions, the researcher was able to explore changes and similarities

in group participation across mothers at various stages along their breastfeeding journeys. For mothers in the earlier stages of breastfeeding, for example, the Facebook groups were used to overcome early breastfeeding challenges. Focus group participants also described a shift in seeking support and posting questions, to actively searching for questions to answer within their group, as a natural transition for mothers breastfeeding for longer durations.

Another similarity observed relates to accessing evidence-based breastfeeding information online. Focus group participants described the evidence-based information provided, as well as, the diverse opinions shared as valuable aspects of their experience. A large number of responses providing informational support were also observed within the QCA. The researcher did not assess the information provided for accuracy, but observed answers often provided by the moderators and cases where misinformation posted was removed or corrected by other group members. Observing aspects of the participants' experience during the QCA that were described within the focus groups provided an additional layer of understanding and the context to interpret the QCA results.

Similarities and differences were also observed for the types of support received within the groups. The survey data allowed the researcher to measure support received while the qualitative data allowed the researcher to examine the types of support requested as well. The results from the content analysis and the focus groups suggest that informational support was most commonly requested and received by the participants. Again, informational support was not measured within the survey. Emotional support, esteem support, and appraisal support were also commonly received by participants within each data source. The data sources differed, however, on whether emotional, appraisal, or esteem support were more commonly received. The overall findings suggest that participants receive a variety of types of support within their Facebook

groups. Although informational support is likely the most common type of support received, a combination of informational support, along with emotional, esteem, and appraisal support are desired by participants and important to breastfeeding mothers who participate in Facebook groups for support. These findings are consistent with other social media studies examining social support exchanged on social networking sites (Meng et al., 2017).

The survey results and the focus group findings, at times, uncovered divergent stories on the outcomes measured through the third research question. The measurement of breastfeeding support through Facebook was not a significant variable predicting intended breastfeeding duration within the regression model, despite significant correlations in the bivariate analysis. However, focus group participants described how their decisions on breastfeeding duration shifted as a result of participating in their group. The focus groups findings suggest that it may be a combination of breastfeeding support received from the group and also exposure to the large number of breastfeeding peers within the groups, which includes images of breastfeeding mothers and information shared about breastfeeding, that leads to a change in breastfeeding intentions, and ultimately duration. Other studies examining the use of mass media have found a positive significant association between mass media campaigns and breastfeeding outcomes. One study, for example, found that mass media exposure to a breastfeeding campaign designed, in part, to influence breastfeeding norms and interpersonal counseling for breastfeeding had significant positive effects on exclusive breastfeeding among a population of mothers in Viet Nam (Nguyen et al., 2016). Social media exposure, like other forms of mass media, may also positively influence breastfeeding outcomes and is a less expensive alternative. Although the measure of perceived breastfeeding norms was not significantly associated with intended breastfeeding duration within this study, other literature suggests that online breastfeeding

attitudes and norms can also be influenced by positive breastfeeding messages on social media (Jin et al., 2015).

The focus group findings also provide possible explanations for the quantitative scores of the moderating variables – self-efficacy, breastfeeding attitudes, and perceived breastfeeding norms. Similar to feeling more empowered in their breastfeeding journeys, some mothers within the focus groups also discussed how their confidence in breastfeeding was improved as a result of participating in their Facebook group. The influence of social support on self-efficacy has been found in the literature on studies examining social support (McCarter-Spaulding, 2012). Survey participants, on average, had high self-efficacy for breastfeeding. The cross-sectional survey and non-random sample does not allow the researcher to determine temporality. However, focus group findings suggest that increased breastfeeding self-efficacy, or confidence, may result from participating in the Facebook support group. In addition, while perceived breastfeeding norms were not significantly associated with intended breastfeeding duration within the survey, focus group participants described how their breastfeeding norms changed as a result of participating in a group with other Black mothers who were breastfeeding. Again, exposure to other mothers through social media groups may therefore play a critical role in shifting cultural norms associated with breastfeeding, especially among mothers who have limited exposure to breastfeeding within their in-person networks. In addition, high scores for breastfeeding attitudes within the survey are also similar to the shifts in breastfeeding beliefs focus group participants described in the study. It is therefore possible that the high values found in the survey for the psychosocial variables resulted from participating in the group, but longitudinal studies are needed to confirm this hypothesis.

Assessing Data Quality

Through the mixed-methods design, the credibility of evidence within this study was strengthened and multiple points of validity checks were performed across the data (Patton, 2015). More specifically, the integration of findings from the focus groups, Facebook conversations, and survey data allowed the researcher to test for consistency across the data. In addition, peer-debriefing and member-reflections are an important part of establishing trustworthiness and were integrated throughout the research study. As described earlier, debriefing took place at the end of each focus group, first with the focus group participants to review emerging themes and then with the note taker for the focus groups. The researcher also invited focus group participants to review and provide feedback on the qualitative manuscript draft, increasing the credibility of the study. The process of conducting member reflections was important for ensuring that the findings accurately captured the experience of the participants in this study (Tracy, 2010).

Limitations

Each data collection method has limitations, some of which were offset by the mixed-methods design of this study. Convenience sampling was used for the survey, which may have introduced selection bias among the survey participants. For example, it is possible that the mothers who participated in this study were highly motivated to breastfeed, which may be an indication of participating in breastfeeding support groups. The non-random sample of survey participants also limits the generalizability of these findings. Furthermore, the cross-sectional study design restricts the ability to claim causation within the results. As described previously, longitudinal studies should be conducted to observe any changes in the treatment and outcome

variables overtime. The focus group findings, however, provide some evidence to causal links between the independent and dependent variables.

It is also possible that survey participants had other sources of breastfeeding support outside of the five categories measured in this survey. Due to the overlap in support sources recorded by participants with categories included within the survey, the "other" category of support was not included in the final score for non-Facebook support. The support categories included within the survey are common sources of support, however, reported by African American breastfeeding mothers (McCarter-Spaulding, 2012). However, the omission of the "other" support entries from survey participants likely affected the participants' calculations of support for the various categories. For example, some survey participants listed lactation consultants and doulas as other sources of breastfeeding support, although the survey specifically described these professionals as examples of heath care providers. It is not possible to determine if participants who listed these sources separately also considered these providers when assessing their support received from healthcare providers.

As mentioned, the scale used to measure the dimensions of social support within the survey, did not include informational support. Though informational support was measured from the content analysis and within the focus groups, the omission of this type of support limits the ability to compare the results from the survey scale to other quantitative studies examining the types of support people experience on social media. It also limits the ability to completely compare and contrast support received across the three data sources.

There are several limitations for the qualitative methodology as well. The focus group moderator's positive attitudes towards breastfeeding may have introduced researcher bias. The researcher took several steps to address this potential bias including maintaining a neutral stance

during focus groups and identifying negative cases within each theme, as they were present. The codes and themes were also reviewed by a PhD-level researcher in the field. As described, there were also several points of member checking, which were also used to validate research findings. Finally, it is possible that the women who participated in this study were highly motivated to breastfeed, which could have influenced the findings of this study, particularly related to longer intended breastfeeding decisions.

Implications for Future Research Studies

The findings from this study provide several implications for future research studies. Longitudinal studies are needed to measure any changes in breastfeeding intentions and psychosocial factors over time, as well as, breastfeeding duration. Experimental studies that examine breastfeeding outcomes from groups of mothers who participate in in-person peer support groups, in comparison to, groups on social media, may also provide additional information on the impact of Facebook breastfeeding support groups. In addition, this study specifically focused on support delivered through social network sites. Facebook dominates the current literature examining social media and social support (Meng et al., 2017). Other forms of social media, like Twitter and Instagram, are not as popular among parents as Facebook, but may serve as sites to exchange breastfeeding support and information (Duggan, 2015). The use of images specifically can be studied on other platforms, like Instagram, and there are currently multiple Instagram pages with large followings that promote breastfeeding. Furthermore, this study examined one potential model in which Facebook support may lead to breastfeeding outcomes. Researchers should consider alternative models that test different pathways and also consider the amount of exposure to breastfeeding messages and images within the support groups.

Finally, the popularity of one of the Facebook groups, may have also influenced the results of this study. In a study by Jin et al. (2015), researchers created simulated pages on Facebook to promote breastfeeding with varying levels of popularity. The impact of different types of breastfeeding messages delivered by mothers and health experts and the popularity of the Facebook pages were compared with participants' breastfeeding attitudes and intentions. The results from a two-way ANOVA found that very popular Facebook pages, operationalized by the number of page likes, that incorporated testimonial messages from mothers, or messages that were a mix of testimony and information, were viewed as more persuasive than the same types of messages delivered on less popular pages. In the current study, differences in independent and dependent variables, based on the popularity of the Facebook group was not assessed. Future studies examining Facebook support groups should examine these factors as well, as less active Facebook groups may have differing effects on breastfeeding outcomes than more active or popular groups.

Implications for Practice

Practitioners have cited the benefits of using social media to reach and support breastfeeding mothers (Asiodu et al., 2015; McCann & McCulloch, 2012; Wolynn, 2012). The findings from this study illustrate the positive experience of Black mothers who participate in breastfeeding support groups on Facebook and also possible lasting impacts on their decisions to breastfeed. The findings suggest that peer support groups through Facebook can be used to aid Black mothers in sustaining breastfeeding and may also aid in further normalizing this practice among this population. The participants in this study also provided information that should be considered when developing support groups on Facebook. Evidence-based information, for example, was highly valued among the groups of mothers in this study. Other studies suggest

that accuracy of information and credibility of sites may influence a mother's decision to participate and seek information online (West et al., 2011). The use of credentialed group administrators therefore may be an important factor in encouraging participation and can also help to ensure that misinformation is not shared within the group. As mentioned, the perceived harsh tone of messages at times is not specific to breastfeeding support groups on Facebook, but a disadvantage of text-based communication. Message tone should be considered, however, when engaging in support groups surrounding potentially sensitive topics, like breastfeeding, as it may deter some participants from asking their questions within the group. Finally, the use of social media platforms or social network sites vary depending on demographics and should be considered when developing online support interventions (Mitchell et al, 2014; Swindle et al, 2014).

CONCLUSIONS

As mothers increasingly seek support online to aid in parenting and other areas, it is important to understand how support seeking in this environment relates to outcomes. This study provides some evidence that participating in peer support groups may lead to longer breastfeeding durations among African American mothers, but additional research is needed in this area. The findings from this study suggest that mothers who participate in these groups have a high regard for their support groups and receive more support from their groups than from other sources of breastfeeding support. Participants in social media groups for breastfeeding support seek and receive a combination of support types, most commonly exchanging informational support that provides ongoing encouragement and assists in overcoming breastfeeding challenges. The findings also suggest that having a community of online peers can positively influence breastfeeding attitudes and self-efficacy and may further establish

breastfeeding as a cultural norm. To the researcher's knowledge this is the first study to examine the experience of breastfeeding mothers who participate in support groups on social networking sites by directly speaking with participants in these communities about their experience. This study therefore provides information that can be used to develop online communities for breastfeeding support in the future.

APPENDIX A. LETTER TO FACEBOOK GROUP ADMINISTRATION

Hello!

My name is Ayanna Robinson. I am a mother and a Ph.D. candidate in the department of Health Promotion and Behavior at the University of Georgia, under the direction of Dr. Marsha Davis (phone: (706)542-4369, email: mdavis@uga.edu). As a doctoral student, I am examining how first-time, African American mothers seek and experience social support for breastfeeding on social network sites, specifically Facebook, and would like to invite the members of your breastfeeding peer support group to participate in this research study.

The purpose of this research is to examine the use of social media support among African American breastfeeding mothers. This study consists of surveying first-time African American breastfeeding mothers on various aspects of their experience with on breastfeeding support and breastfeeding outcomes. There are no foreseen risks for participating in this study. However, as a result, you can be provided with a report on community views and other findings.

This study will be conducted in two phases and consists of the following:

- **Phase 1: Surveys and online focus groups**
    - With your permission, I would like to make a post in the group providing a brief description of the study and the link to complete the survey. This post can be posted by myself or by the group administrators, if preferred. Please also let me know if the post can be pinned to the top of the page for increased visibility, or if it should be made within the page.
    - The survey takes approximately 15 minutes to complete. The survey link will remain open for approximately one month and I have developed two additional reminders to post, if allowed. Alternatively, I can also post a one-time announcement about the study.
    - Based on responses to the survey, some participants may be asked to participate in an online focus group. Focus groups will last 60 to 90 minutes.
- **Phase 2: A content analysis of group discussions over a 24-hour period**
    - The content analysis seeks to better understand the experiences and interactions of mothers in the group through their own language. Conversations will be extracted directly from the Facebook page over a 24-hour period for analysis. Participants will not be contacted directly for the content analysis and all identifying information from posts will be removed. Please let me know if there are any restrictions to collecting conversations from the Facebook group.

There are few studies that explore the support that African American women experience for breastfeeding online. The results of this study can be used to inform the development of breastfeeding support initiatives for African American mothers and add to the understanding of how African American mothers provide and receive support for breastfeeding in various settings.

The protection of the participants and integrity of the group is of utmost importance. Therefore, no identifying information will be reported from the group members and all responses will be kept confidential. In addition, all identifying information from the content analysis, such as names and other identifying information available through Facebook will not be reported or included in the analysis. Furthermore, the identity of the Facebook group will also be kept anonymous, unless you would like to include the group name in the report.

Please respond to this email indicating your permission to post an announcement in your group. Please also let me know if it is okay to extract conversations from the group for analysis. I invite you to discuss the project further and I am happy to answer any questions you many have. I can be reached at (513)886-4940 or Ayanna.robinson25@uga.edu.

Thank you very much for your time and consideration! I appreciate your assistance and look forward to hearing from you!

Sincerely,
Ayanna Robinson, MPH
Ph.D. candidate in Health Promotion and Behavior
The University of Georgia
Athens, GA 30606
ayanna.robinson25@uga.edu

Marsha Davis, Ph.D.
Associate Professor
The University of Georgia
Athens, GA 30606
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APPENDIX B. RECRUITMENT FLYER

KidStock/Creative RF/Getty Images

BREASTFEEDING SUPPORT RESEARCH STUDY

Are you a first-time, African American mother?

Are you currently breastfeeding?

Are you a member of a breastfeeding support group on Facebook?

If you answered yes to the questions above, please consider completing this survey!

- **Who: First-time, African American mothers**
  - 18 years old or older
  - Currently breastfeeding (Group 1: within 3 months postpartum, Group 2: beyond 3 months postpartum)
  - Participates in a Facebook breastfeeding support group for Black mothers
- **What: 15-minute online survey about breastfeeding support groups on Facebook**
  - Select participants will be invited to participate in a 60 to 90-minute online focus group for the second part of the study.
- **Why: Be entered to win a $10 gift card!***
  - Findings from this study can be used to better understand how African American mothers experience support for breastfeeding and to develop online interventions designed to support breastfeeding mothers.

For more information and to take the survey, click Breastfeeding Support Study or copy and paste the link into your browser:

https://ugeorgia.qualtrics.com/jfe/form/SV_3aqdVA2gH5n7b4p

Questions?

Contact:
Ayanna Robinson, MPH
Ph.D. candidate in Health Promotion and Behavior
The University of Georgia
Athens, GA 30606
ayanna.robinson25@uga.edu

Principal Investigator:
Marsha Davis, Ph.D.
Associate Professor
The University of Georgia
Athens, GA 30606
mdavis@uga.edu

**Please note participation in the survey is not required to be entered into the raffle for the $10 gift card.*

APPENDIX C. CONSENT FORMS

University of Georgia
Survey Consent Letter
Social Networking and Breastfeeding Support: Experience and Outcomes Among African American Mothers

Ayanna Robinson, a PhD candidate at The University of Georgia, is conducting a research study with first-time African American breastfeeding mothers, titled "Social Networking and Breastfeeding Support: Experience and Outcomes among African American Mothers". The purpose of this research is to understand how African American mothers seek and experience social support for breastfeeding within online platforms, such as social network sites (SNSs). In addition, this study will examine infant feeding decisions and other outcomes related to breastfeeding. As an African American mother and member of a Facebook group for breastfeeding support, you are invited to participate in this study. In addition, in order to participate in this study, you must be:

- A first-time mother,

-18 years old or older,

-African American, and

-Currently breastfeeding.

There are three parts of this study. You are being asked to participate in Part I. Based on responses to Part I, some participants may be asked to participate in Part II, which will involve an online focus group to further explore your experiences with breastfeeding support through Facebook. Your participation in Part I will involve completing an online survey to assess your experience with Facebook support groups, other sources of breastfeeding support, your infant

feeding practices, and attitudes and beliefs about breastfeeding. This survey should take approximately 15 minutes of your time.

You may not benefit directly from this research. The findings from this study may be used, however, to better understand how women experience online support and to inform support interventions for mothers delivered through social network sites, like Facebook. You can be entered to win a $10 gift card. Forty entries will be randomly selected as winners of the raffle and participation is not required to be entered into the random drawing. Participation in this research is voluntary and you may withdraw your participation at any time and still receive the payment. There are no foreseen risks in this research; however, if at any time during this survey you feel any discomfort, you can exit the survey. If you decide to withdraw from the study, the information that can be identified as yours will be kept as part of the study and may continue to be analyzed, unless you make a written request to remove or destroy the information.

Your responses will be confidential and only the researchers will have access to your data. This data will be stored on a password-protected computer. Internet communications are insecure and there is a limit to the confidentiality that can be guaranteed. However, once the materials are received by the researcher, standard confidentiality procedures will be employed. The researcher will not release identifiable results from the study to anyone other than individuals working on the project without your written consent unless required by law. The results of the research study may be published, but your name or any identifying information will not be used. The published results will be presented in summary form only.

If you have any questions about this research, please feel free to contact Ayanna Robinson at ayanna.robinson25@uga.edu. Additional questions or concerns regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review

Board, University of Georgia, 206 Tucker Hall Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; e-mail Address IRB@uga.edu.

By clicking on the link below to go to the questionnaire, you are consenting to participate in the research as described above. Please do not share this link with others or discuss the content of this survey within the Facebook group. Please print or save a copy of this page for your records.

Thank you for your consideration!

Sincerely,
Ayanna Robinson, MPH
Ph.D. candidate in Health Promotion and Behavior
The University of Georgia
Athens, GA 30606
ayanna.robinson25@uga.edu

Marsha Davis, Ph.D.
Associate Professor
The University of Georgia
Athens, GA 30606
mdavis@uga.edu

Please enter the email address where you would like to receive your gift card in the space below. If you do not wish to be entered into the gift card drawing, proceed to the next screen to begin the survey.

University of Georgia
Focus Group Consent Letter
Social Networking and Breastfeeding Support: Experience and Outcomes Among African American Mothers

Introduction
Thank you for your interest in participating in Part II of the research study titled "Social Networking and Breastfeeding Support: Experience and Outcomes among African American Mothers". This research is being conducted by Ayanna Robinson, a PhD Candidate at the University of Georgia within the Department of Health Promotion and Behavior. The purpose of this research is to understand how African American mothers seek and experience social support for breastfeeding within online platforms, such as social network sites (SNSs). In addition, this study will examine infant feeding decisions and other outcomes related to breastfeeding.

In order to participate in this research study, you must be:
- A first-time mother,
-18 years old or older,
-African American, and
-Currently breastfeeding.

Study Procedures
If you agree to participate in Part II of this study, you will be asked to …

- Participate in an online 60 – 90-minute focus group with other breastfeeding mothers. This focus group will further explore your experiences with breastfeeding support through Facebook.

Risks and discomforts

- There are no anticipated risks from participating in this group.
- Your name will not be used in any reports or study documents.

Benefits

- You may not benefit directly from this research. The findings from this research study may be used, however, to better understand how women experience online support and to inform support interventions for mothers delivered through social network sites, like Facebook.
- Focus group participants will also receive a gift card for $20 following the focus group.

Audio/Video Recording
Focus groups will be audio and video recorded to make sure that we collect all important information that is shared. The discussion will be transcribed so the information you share during the focus group is captured accurately.

Privacy/Confidentiality
While the investigator will emphasize to all participants that comments made during the focus group session should be kept confidential, it is possible that participants may repeat comments outside of the group at some time in the future. That being said, your name and other personally identifiable information will be kept confidential. Responses from the focus group will be

summarized and reported within themes at the aggregate level. Within the report, direct quotes may be used to illuminate themes. However, your name will be replaced with a pseudonym and you will not be linked to the quote.

The recordings will be stored securely on a password protected computer. The researcher will not release the results from the study to anyone other than individuals working on the project without your written consent unless required by law.

The project's records may be reviewed by departments at the University of Georgia responsible for regulatory and project oversight.

Taking part is voluntary
Your involvement in the focus group is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled.

If you decide to stop or withdraw from the focus group, the information/data collected from or about you up to the point of your withdrawal will be kept as part of the data and may continue to be analyzed.

If you have questions
If you have any questions about this research, please feel free to contact Ayanna Robinson at ayanna.robinson25@uga.edu. Additional questions or concerns regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, Athens, Georgia 30602-7411; Telephone (706) 542-3199; e-mail Address IRB@uga.edu

Subject's Consent to Participate in Focus Group:
By logging into the online location for the focus group, you are agreeing to participate in the above described research study.

Thank you for your consideration! Please keep this letter for your records.

Sincerely,

Ayanna Robinson, MPH
Ph.D. candidate in Health Promotion and Behavior
The University of Georgia
Athens, GA 30606
ayanna.robinson25@uga.edu

Marsha Davis, Ph.D.
Associate Professor
The University of Georgia
Athens, GA 30606
mdavis@uga.edu

APPENDIX D. SCREENER

Participant Screener Questionnaire

Thank you for your interest in participating in this study. Please answer the following questions to determine your eligibility for participating in the survey.

1. Do you consider yourself African American or Black?
- ❍ No (1)
- ❍ Yes (2)

2. Are you 18 years old or older?
- ❍ No (1)
- ❍ Yes (2)

3. Are you a member of a breastfeeding support group on Facebook?
- ❍ No (1)
- ❍ Yes (2)

4. Has your baby been born?
- ❍ No (1)
- ❍ Yes (2)

5. Are you currently breastfeeding? Breastfeeding is defined as, the receipt by the infant of any breastmilk within the past 24 hours, including breastmilk received from a bottle.
- ❍ No (1)
- ❍ Yes (2)

6. Are you a first-time mother?
- ❍ No (1)
- ❍ Yes (2)

7. Is your baby older than 12 weeks?
- ❍ No (1)
- ❍ Yes (11)

End of Screener

APPENDIX E. QUESTIONNAIRE

Questionnaire

1. Which one of the following best describes your current infant feeding practices?

- ❍ Breastfeeding exclusively (that is, breastfeeding without the use of human milk substitutes or solid foods) (1)
- ❍ Mixed feeding (breastfeeding and use of human milk substitutes or solid foods) (2)

2. How many weeks or months have you been breastfeeding or pumping milk to feed your baby? Please type in the number of weeks OR months in the space provided:

number of weeks (11)
number of months (12)

3. How many weeks or months do you plan to breastfeed or provide pumped milk to feed your baby? Please type the number of weeks OR months in the space provided:

number of weeks (1)
number of months (2)

4. What is your country of birth?

- ❍ United States (1)
- ❍ Outside of the U.S. (2)

5. In which state do you currently reside?

- ❍ Alabama (1)
- ❍ Alaska (2)
- ❍ Arizona (3)
- ❍ Arkansas (4)
- ❍ California (5)
- ❍ Colorado (6)
- ❍ Connecticut (7)
- ❍ Delaware (8)
- ❍ District of Columbia (9)
- ❍ Florida (10)
- ❍ Georgia (11)
- ❍ Hawaii (12)
- ❍ Idaho (13)
- ❍ Illinois (14)
- ❍ Indiana (15)
- ❍ Iowa (16)
- ❍ Kansas (17)
- ❍ Kentucky (18)
- ❍ Louisiana (19)
- ❍ Maine (20)
- ❍ Maryland (21)
- ❍ Massachusetts (22)
- ❍ Michigan (23)
- ❍ Minnesota (24)
- ❍ Mississippi (25)
- ❍ Missouri (26)
- ❍ Montana (27)
- ❍ Nebraska (28)
- ❍ Nevada (29)
- ❍ New Hampshire (30)
- ❍ New Jersey (31)
- ❍ New Mexico (32)
- ❍ New York (33)
- ❍ North Carolina (34)
- ❍ North Dakota (35)
- ❍ Ohio (36)
- ❍ Oklahoma (37)
- ❍ Oregon (38)
- ❍ Pennsylvania (39)

- ❍ Puerto Rico (40)
- ❍ Rhode Island (41)
- ❍ South Carolina (42)
- ❍ South Dakota (43)
- ❍ Tennessee (44)
- ❍ Texas (45)
- ❍ Utah (46)
- ❍ Vermont (47)
- ❍ Virginia (48)
- ❍ Washington (49)
- ❍ West Virginia (50)
- ❍ Wisconsin (51)
- ❍ Wyoming (52)
- ❍ I do not reside in the United States (53)

6. What year were you born? Please type the year you were born in the space provided.

7. What is your marital status? Are you…
- ❍ Married (1)
- ❍ Cohabiting/Living with partner (5)
- ❍ Single (2)
- ❍ Widowed (3)
- ❍ Separated/Divorced (4)

8. What is the highest degree you received?
- ❍ Less than high school diploma (1)
- ❍ High school diploma or equivalent (GED) (2)
- ❍ Associate degree (3)
- ❍ Bachelor’s Degree (4)
- ❍ Master's Degree (7)
- ❍ Professional Degree (ex. MD, DDS, DVM, JD) or Doctorate Degree (ex. Ph.D. or Ed. D) (5)

9. Approximately, what is your annual household income?

- ❍ Less than $10,000 (1)
- ❍ $10,000 - $14,999 (2)
- ❍ $15,000 – $19,999 (3)
- ❍ $20,000 - $29,999 (4)
- ❍ $30,000 - $39,999 (5)
- ❍ $40,000 - $49,999 (6)
- ❍ $50,000 - $59,999 (7)
- ❍ $60,000 - $69,999 (8)
- ❍ $70,000 - $79,999 (9)
- ❍ $80,000 - $89,999 (10)
- ❍ $90,000 - $99,999 (11)
- ❍ $100,000 - $149,999 (12)
- ❍ $150,000 or more (13)

10. Did you have twins or multiple births?

- ❍ No (2)
- ❍ Yes, 2 or more (1)

11. Did you have any medical problems that prevented you from feeding your baby for more than a week?

- ❍ No (1)
- ❍ Yes (2)

12. Does your baby have any special needs or medical problems that might affect his or her feeding?

- ❍ No (1)
- ❍ Yes (2)

13. Did your baby have to stay in the intensive care unit?

- ❍ No (1)
- ❍ Yes, 3 days or less (2)
- ❍ Yes, more than 3 days (3)

14. Did you deliver your baby before 37 gestation weeks?

- ❍ No (1)
- ❍ Yes (2)

15. On a scale from 1 to 5, where 1 indicates not at all confident and 5 indicates always confident, please select your confidence in always completing the following.

	1. Not at all Confident (1)	2. (2)	3. (3)	4. (4)	5. Always Confident (5)
I can always determine that my baby is getting enough milk (1)	❍	❍	❍	❍	❍
I can always successfully cope with breastfeeding like I have with other challenging tasks (2)	❍	❍	❍	❍	❍
I can always breastfeed my baby without using formula as a supplement (3)	❍	❍	❍	❍	❍
I can always ensure that my baby is properly latched on for the whole feeding (4)	❍	❍	❍	❍	❍
I can always manage the breastfeeding situation to my satisfaction (5)	❍	❍	❍	❍	❍
I can always manage to breastfeed even if my baby is crying (6)	❍	❍	❍	❍	❍

I can always keep wanting to breastfeed (7)	❍	❍	❍	❍	❍
I can always comfortably breastfeed with my family members present (8)	❍	❍	❍	❍	❍
I can always be satisfied with my breastfeeding experience (9)	❍	❍	❍	❍	❍
I can always deal with the fact that breastfeeding can be time-consuming (10)	❍	❍	❍	❍	❍
I can always finish feeding my baby on one breast before switching to the other breast (11)	❍	❍	❍	❍	❍
I can always continue to breastfeed my baby for every feeding (12)	❍	❍	❍	❍	❍
I can always manage to keep up with my baby's breastfeeding demands (13)	❍	❍	❍	❍	❍

I can always tell when my baby is finished breastfeeding (14)	❍	❍	❍	❍	❍

16. For each of the following statements, where 1 = strongly disagree and 5 = strongly agree, please select how much you agree or disagree with the following.

	1. Strongly Disagree (1)	2. Disagree (2)	3. Neither Disagree nor Agree (3)	4. Agree (4)	5. Strongly Agree (5)
The nutritional benefits of breast milk only last until the baby is weaned from breast milk. (1)	❍	❍	❍	❍	❍
Formula-feeding is more convenient than breastfeeding. (2)	❍	❍	❍	❍	❍
Breastfeeding increases mother–infant bonding. (3)	❍	❍	❍	❍	❍
Breast milk is lacking in iron. (4)	❍	❍	❍	❍	❍
Formula-fed babies are more likely to be overfed than are breast-fed babies. (5)	❍	❍	❍	❍	❍
Formula-feeding is the better choice if a mother plans to work outside the home or attend school. (6)	❍	❍	❍	❍	❍

Mothers who formula-feed miss one of the great joys of motherhood. (7)	❍	❍	❍	❍	❍
Women should not breastfeed in public places such as restaurants. (8)	❍	❍	❍	❍	❍
Babies fed breast milk are healthier than babies who are fed formula. (9)	❍	❍	❍	❍	❍
Breast-fed babies are more likely to be overfed than formula-fed babies (10)	❍	❍	❍	❍	❍
Fathers feel left out if a mother breast-feeds. (11)	❍	❍	❍	❍	❍
Breast milk is the ideal food for babies. (12)	❍	❍	❍	❍	❍
Breast milk is more easily digested than formula. (13)	❍	❍	❍	❍	❍
Formula is as healthy for an infant as breast milk. (14)	❍	❍	❍	❍	❍

Breastfeeding is more convenient than formula feeding. (15)	❍	❍	❍	❍	❍
Breast milk is less expensive than formula. (16)	❍	❍	❍	❍	❍
A mother who occasionally drinks alcohol should not breast-feed her baby. (17)	❍	❍	❍	❍	❍

17. The next set of questions ask about your experience with using a Facebook group for breastfeeding support. If you participate in more than one breastfeeding support group on Facebook, please answer the following questions about the group you participate in most often.

18. About how long ago did you start using this Facebook support group?

❍ Less than 6 months ago (1)
❍ Between 6 months and 1 year ago (2)
❍ More than 1 year ago, but less than 2 years (3)
❍ Two or more years ago (4)

19. About how often do you visit this Facebook group?

❍ Several times a day (1)
❍ About once a day (2)
❍ 3–5 days a week (3)
❍ 1–2 days a week (4)
❍ Every few weeks (5)
❍ Less often (6)

20. On a scale from 1 to 4, where 1 equals not at all and 4 equals very much, please answer the following questions about the members in this Facebook group.

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much do the members of this Facebook group provide emotional support in your decision to breastfeed? (1)	❍	❍	❍	❍
How much do the members of this Facebook group know about breastfeeding? (2)	❍	❍	❍	❍
How important do the members of this Facebook group think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much can you call on the members of this Facebook group for help with breastfeeding? (4)	❍	❍	❍	❍
How much do the members of this Facebook group support your decision if you are experiencing problems with breastfeeding? (5)	❍	❍	❍	❍

21. For each of the following statements, where 1 = definitely no and 7 = definitely yes, please select the number that most closely corresponds to your opinion. When I have a problem related to breastfeeding, the members of this Facebook group…

	1. Definitely No (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7. Definitely Yes (7)
Give objective feedback to me about how I'm handling my problem (1)	❍	❍	❍	❍	❍	❍	❍
Make me feel comfortable discussing sensitive health issues, as they relate to breastfeeding (2)	❍	❍	❍	❍	❍	❍	❍
Make me feel comfortable sharing my private worries and fears about breastfeeding (3)	❍	❍	❍	❍	❍	❍	❍
Show confidence in my ability to deal with my breastfeeding concern (4)	❍	❍	❍	❍	❍	❍	❍
Make me feel that I am good at making decisions about breastfeeding (5)	❍	❍	❍	❍	❍	❍	❍
Make me feel as though I am capable of handling my breastfeeding problem (6)	❍	❍	❍	❍	❍	❍	❍
Provide encouragement to me (7)	❍	❍	❍	❍	❍	❍	❍

Show me empathy (8)	❍	❍	❍	❍	❍	❍	❍
Make me feel relieved (9)	❍	❍	❍	❍	❍	❍	❍
Drive me to a medical or health professional, if I ask for a ride (10)	❍	❍	❍	❍	❍	❍	❍
Buy me breastfeeding supplies if I ask for it (11)	❍	❍	❍	❍	❍	❍	❍

The next set of questions ask about any other sources of breastfeeding support you may have. On a scale from 1 to 4, where 1 equals not at all and 4 equals very much, please answer the following questions about your other sources of breastfeeding support.

22. The first set of questions apply to your spouse or partner.

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support does your spouse/partner provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much does your spouse/partner know about breastfeeding? (2)	❍	❍	❍	❍
How important does your spouse/partner think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on your does your spouse/partner for help with breastfeeding? (4)	❍	❍	❍	❍
How much will your spouse/partner support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

23. The next set of questions apply to your mother.

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support does your mother provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much does your does your mother know about breastfeeding? (2)	❍	❍	❍	❍
How important does your does your mother think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on your does your does your mother for help with breastfeeding? (4)	❍	❍	❍	❍
How much will your mother support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

24. The next set of questions apply to other family members (outside of your mother and spouse/partner). Overall...

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support do your family members provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much do your family members know about breastfeeding? (2)	❍	❍	❍	❍
How important do your family members think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on your family members for help with breastfeeding? (4)	❍	❍	❍	❍
How much will your family members support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

25. The next set of questions apply to your friends. Overall...

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support do your friends provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much do your friends know about breastfeeding? (2)	❍	❍	❍	❍
How important do your friends think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on your friends for help with breastfeeding? (4)	❍	❍	❍	❍
How much will your friends support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

26 The next set of questions apply to your health care provider(s) (e.g. doctors, nurses, lactation consultants). Overall...

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support do your health care providers provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much do your health care providers know about breastfeeding? (2)	❍	❍	❍	❍
How important do your health care providers think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on your health care providers for help with breastfeeding? (4)	❍	❍	❍	❍
How much will your health care providers support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

27. You may have other sources of breastfeeding support (e.g. breastfeeding classes). Outside of the categories listed above, do you have any other significant sources of breastfeeding support? If yes, please list one additional source of breastfeeding support in the space provided that you consider to be significant.

- ❍ Yes (1) _____
- ❍ No (2)

Condition: No Is Selected. Skip To: End of Block.

28. For the source of support listed in the previous question, please answer the following questions.

	1 = Not at all (1)	2 = A little bit (2)	3 = An average amount (3)	4 = Very much (4)
How much emotional support does he/she provide in your decision to breastfeed? (1)	❍	❍	❍	❍
How much does he/she know about breastfeeding? (2)	❍	❍	❍	❍
How important does he/she think it is to breastfeed your baby? (3)	❍	❍	❍	❍
How much do you expect to call on he/she for help with breastfeeding? (4)	❍	❍	❍	❍
How much will he/she support your decision if you experience problems with breastfeeding? (5)	❍	❍	❍	❍

The next set of questions ask about some social norms of infant feeding practices. For each of the following statements, where 1 = strongly disagree and 6 = strongly agree, please indicate how

much you disagree or agree by selecting the number that most closely corresponds to your opinion.

29. Most people who are important to me (e.g. family members, friends)...

	1. Strongly Disagree (1)	2. Disagree (2)	3. Somewhat Disagree (3)	4. Somewhat agree (4)	5. Agree (5)	6. Strongly Agree (6)
Think that I should feed my infant only breast milk, and no food, water, or infant formula for the first 6 months. (1)	❍	❍	❍	❍	❍	❍
Think I should breastfeed my infant for one year or longer. (2)	❍	❍	❍	❍	❍	❍
Approve of me giving my baby water before she/he reaches 6 months of age. (3)	❍	❍	❍	❍	❍	❍
Approve of me giving my baby infant formula before she/he reaches 6 months of age. (4)	❍	❍	❍	❍	❍	❍

Approve of me giving my baby solid, semi-solid foods before s/he reaches 6 months of age. (5)	❍	❍	❍	❍	❍	❍

APPENDIX F. FOCUS GROUP PROTOCOL

Introduction

Thank you for joining the focus group today. My name is Ayanna Robinson and I am a PhD candidate in the department of Health Promotion and Behavior at the University of Georgia. *[Introduce notetaker.]* I will be moderating our focus group today. The purpose of this focus group is to explore the experiences of African American mothers who participate in Facebook groups for breastfeeding support. It is from my own experiences as a mother that I am interested in the use of the internet for breastfeeding support among African American mothers. At this time, I would like everyone to introduce themselves. Please tell us the city and state you reside in and how long you have been breastfeeding *[Proceed with introductions.]*

Thank you. This session is expected to last between 1-1.5 hours. The discussion will be recorded and transcribed so the information you share today is captured accurately. Your name and other personally identifiable information will be kept confidential. Responses from the focus group will be summarized and reported within themes at the aggregate level. Within the report, direct quotes may be used to illuminate themes. However, your name will be replaced with a pseudonym and you will not be linked to the quote. There are no right or wrong answers to the focus group questions. I want to hear from many different viewpoints and would like to hear from everyone. I hope you can be honest even when your responses may not be in agreement with the rest of group. In respect for each other, I ask that only one individual speaks at a time in the group and that responses made by all participants be kept confidential.

Are there any questions before we begin? *[Address any questions]*. If there are no further questions, I will start the recording now.

Focus Group Questions

Introduction

1. To begin, how did you find out about the Facebook group for breastfeeding support?

Sources and Types of Breastfeeding Support

2. What led you to join the group?

a. What type of breastfeeding support were you looking for? For example, some mothers are looking for breastfeeding information, or emotional support.

b. What type of breastfeeding support did/do you receive?

3. Now, I would like for you to think about any support you receive outside of the Facebook group. For example, some mothers receive breastfeeding support from their spouse or partner, their mother, or health care provider. Outside of the Facebook group, where do you get support for breastfeeding?

a. Compare the support you receive from the Facebook group to other sources of breastfeeding support you may have (e.g. differences in the type of support you receive and the amount of support received).

Experience

Next, I would like to ask about your experiences with the Facebook group.

4. Describe what your experience has been like so far in the Facebook support group.

Probe: Do you make posts in the group? Describe the nature of your posts.

   a. How do you feel about the images of Black mothers posted in the group by other group members?

5. What aspects of the Facebook support group are most valuable? Why?

6. What are the advantages and disadvantages of participating in a Facebook group for breastfeeding support?

7. What suggestions do you have for improving the experience of African American mothers who participate in online breastfeeding support groups?

Now, I would like to ask you about your breastfeeding decisions…

Support Group and Breastfeeding Outcomes

8. Breastfeeding support groups can assist mothers in overcoming breastfeeding barriers, but can also influence how African American mothers perceive breastfeeding. For example, some think that participating in support groups may lead to a more positive view of breastfeeding and/or improve a mother's confidence in breastfeeding. In what way(s) has participating in the group impacted your beliefs about African American mothers and breastfeeding, if at all?

9. Breastfeeding support groups may also improve a mother's breastfeeding decisions, like how long a mother decides to breastfeed, through exposure to other breastfeeding mothers. In what way(s) has participating in the group influenced your breastfeeding decisions, if at all?

Closing

10. Is there anything else you would like to add about your experience in participating in a Facebook support group for breastfeeding?

[Summary Statement] Before closing out our session, I want to take the opportunity to review some themes that I noticed. *[Review emerging themes.]* Is this accurate?

That concludes our session. Thank you for your participation. If you have any questions about this study in the future, feel free to contact me at Ayanna.Robinson25@uga.edu.

REFERENCES

Alinia, M. (2015). On Black feminist thought: Thinking oppression and resistance through intersectional paradigm. *Ethnic & Racial Studies, 38*(13), 2334-2340.

Allen, J., Ruowei, L., Scanlon, K., Perinne, C., & Chen, J. (2013). Progress in increasing breastfeeding and reducing racial/ethnic differences — United States, 2000–2008 Births. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6205a1.htm?s_cid=mm6205a1_w

American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics, 129*(3), e827-e841.

Anderson, J, Johnstone, B., & Remley, D. (1999). Breast-feeding and cognitive development: a meta-analysis. *American Journal of Clinical Nutrition, 70,* 525–35.

Anstey, E., Chen, J., Elam-Evans, L.D., & Perrine, C.G. (2017). Racial and geographic differences in breastfeeding — United States, 2011–2015. *Morbidity and Mortality Weekly Report 2017, 66*(27), 723–727. doi:http://dx.doi.org/10.15585/mmwr.mm6627a3

Anstey, E., Shoemaker, M., Barrera, C., O'Neil, M., Verma, A., & Holman, D. (2017). Breastfeeding and breast cancer risk reduction: Implications for Black mothers. *American Journal of Preventive Medicine, 53*(3), S40-S46. doi:10.1016/j.amepre.2017.04.024

Asiodu, I., Waters, C., Dailey, D., Lee, K., & Lyndon, A. (2015). Breastfeeding and use of social media among first-time African American mothers. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 44*(2), 268-278.

Asiodu, I. V., Waters, C. M., Dailey, D. E., Lee, K. A., & Lyndon, A. (2015). Breastfeeding and Use of Social Media Among First-Time African American Mothers. *Jognn-Journal of Obstetric Gynecologic and Neonatal Nursing, 44*(2), 268-278. doi:10.1111/1552-6909.12552

Audelo L. (2014). Connecting with today's mothers: Breastfeeding support online. *Clinical Lactation, 5*(1),16-19.

Bai, Y., Wunderlich, S., & Fly, A. (2011). Predicting intentions to continue exclusive breastfeeding for 6 months: A comparison among racial/ethnic groups. *Journal of Maternal and Child Health. 15*, 1257-1264.

Balatsoukas, P., Kennedy, C., Buchan, I., Powell, J., & Ainsworth, J. (2015). The role of social network technologies in online health promotion: A narrative review of theoretical and empirical factors influencing intervention effectiveness. *Journal of Medical Internet Research, 17*(6), e141-e141. doi:10.2196/jmir.3662

Bartholomew, M., Schoppe-Sullivan, S., Glassman. M, Kamp-Dush, C., & Sullivan, J. (2012). New parents' Facebook use at the transition to parenthood. *Family Relations. 61*(3), 455-469.

Bartick, M., Stuebe, A., Schwarz, E., Luongo, C., Reinhold, A., & Foster, E. M. (2013). Cost analysis of maternal disease associated with suboptimal breastfeeding. *Obstetrics and Gynecology, 122*(1), 111-119. doi:10.1097/AOG.0b013e318297a047

Bartick, M., Jegier, B., Green, B., Schwarz, E., Reinhold, A., & Stuebe, A. (2016). Disparities in breastfeeding: Impact on maternal and child health outcomes and costs. *Journal of Pediatrics.*

Belsky, J. (1984). The determinants of parenting: a process model. *Child Dev, 55*(1), 83-96.

Bentley, M., Dee, D., & Jenson, J. (2003). Breastfeeding among low income African-American women: Power, beliefs and decision making. *Journal of Nutrition, 133*(1), 305-309.

Binns, C., Lee, M., & Low, W. (2016). The long-term public health benefits of breastfeeding. *Asia-Pacific Journal of Public Health, 8*(1) 7–14.

Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology, 3*, 77-101.

Bridges, N. (2016). The faces of breastfeeding support: Experiences of mothers seeking breastfeeding support online. *Breastfeeding Review: Professional Publication Of The Nursing Mothers' Association Of Australia*. *24*(1), 11-20.

Britton, C., McCormick, F., Renfrew, M., Wade, A., & King, S. (2012). Support for breastfeeding mothers. *Cochrane Database Systems Review*, (1). Cd001141.

Brockway, M., Benzies, K., & Hayden, K. A. (2017). Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: A systematic review and meta-analysis. *Journal of Human Lactation, 33*(3), 486.

Brown, J., & Peuchaud, S. (2008). Media and breastfeeding: Friend or foe? *International Breastfeeding Journal*, 3, 15. doi:10.1186/1746-4358-3-15

Brown, Raynor, P., & Lee, M. (2011). Young mothers who choose to breast feed: the importance of being part of a supportive breast-feeding community. *Midwifery, 27*(1), 53-59. doi:10.1016/j.midw.2009.09.004

Capurro, D., Cole, K., Echavarría, M., Joe, J., Neogi, T., & Turner, A. (2014). The use of social networking sites for public health practice and research: A systematic review. *Journal of Medical Internet Research, 16*(3), e79. doi:10.2196/jmir.2679

Castillo-Montoya, M. (2016). Preparing for Interview Research: The Interview Protocol Refinement Framework. *The Qualitative Report,, 21*(5), 811-831. doi:http://nsuworks.nova.edu/tqr/vol21/iss5/2

Cavallo, D., Tate, D., Ries, A., Brown, J., DeVellis, R., & Ammerman, A. (2012). A social media-based physical activity intervention. *American Journal of Preventive Medicine*. *43*, 527–532.

CDC. (2013). Strategies to prevent obesity and other chronic diseases: The CDC guide to strategies to support breastfeeding mothers and babies.

Centers for Disease Control and Prevention. (2014). PRAMS and breastfeeding. Retrieved on September 27, 2014 from http://www.cdc.gov/prams/breastfeeding.htm#11

Chapman, D. J., & Pérez-Escamilla, R. (2012). Breastfeeding Among Minority Women: Moving From Risk Factors to Interventions.

Collins, P. (2000). *Black Feminist Thought: Knowledge, consciousness, and the politics of empowerment.* (2nd ed.). Routledge: New York, NY.

Coulson, N. S., & Greenwood, N. (2012). Families affected by childhood cancer: an analysis of the provision of social support within online support groups. Child: Care, Health & Development, 38(6), 870-877. doi:10.1111/j.1365-2214.2011.01316.x

Cowie, G., Hill, S., & Robinson, P. (2011). Using an online service for breastfeeding support: What mothers want to discuss. *Health Promotion Journal of Australia. 22*(2), 113-118.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.

Creswell, J. W. (2014). *A concise introduction to mixed methods research*: Sage Publications.

Cross-Barnet, C., Augustyn, M., Gross, S., Resnik, A., & Paige, D. (2012). Long-term breastfeeding support: Failing mothers in need. *Maternal & Child Health Journal, 16*(9), 1926. doi:10.1007/s10995-011-0939-x

Cutrona, C. & Suhr, J.(1992). Controllability of stressful events and satisfaction with spouse support behaviors. *Communication Research, 19,* 154-174.

de Jager, E., Broadbent, J., Fuller-Tyszkiewicz, M., & Skouteris, H. (2014). The role of psychosocial factors in exclusive breastfeeding to six months postpartum. *Midwifery, 30*(6), 657-666. doi:https://doi.org/10.1016/j.midw.2013.07.008

De LaMora, A., & Russell, D. (1999). The Iowa infant feeding attitude scale: Analysis of reliability and validity. *Journal of Applied Social Psychology, 29* (11), 2362–2380.

Dennis, C. L. (2003). The breastfeeding self-efficacy scale: Psychometric assessment of the short form. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 32*(6), 734-744. doi:10.1177/0884217503258459

Dennis, C. L., Heaman, M., & Mossman, M. (2011). Psychometric testing of the breastfeeding self-efficacy scale-short form among adolescents. *J Adolesc Health, 49*(3), 265-271. doi:10.1016/j.jadohealth.2010.12.015

Dennis, C., Hodnett, E., Gallop, R., & Chalmers, B. (2002). The effect of peer support on breast-feeding duration among primiparous women: A randomized controlled trial. *Canadian Medical Association Journal, 166*(1), 21-28. Retrieved from http://proxy-remote.galib.uga.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mnh&AN=11800243&site=eds-live

Duggan. M., Lenhart, A., Lampe, C., & Ellison, N. (2015). Parents and social media: Mothers are especially likely to give and receive support on social media. *Pew Research Center*.

Dunham, P., Hurshman, A., Litwin, E., Gusella, J., Ellsworth, C., & Dodd, P. (1998). Computer-mediated social support: Single young mothers as a model system. *American Journal of Community Psychology, 26*(2), 281-306.

Emmott, E. H., & Mace, R. (2015). Practical Support from Fathers and Grandmothers Is Associated with Lower Levels of Breastfeeding in the UK Millennium Cohort Study. PLoS ONE, 10(7), e0133547. http://doi.org/10.1371/journal.pone.0133547

Fishbein, M., Yzer, M. (2003). Using theory to design effective health behavior interventions. *Communication Theory, 13*(2), 164-183.

Giglia, R. & Binns, C. (2014). The effectiveness of the internet in improving breastfeeding outcomes: A systematic review. *Journal of Human Lactation 30*, 156–160.

Giglia, R., Cox, K., Zhao, Y., & Binns, C. W. (2015). Exclusive breastfeeding increased by an internet intervention. *Breastfeeding Medicine: The Official Journal Of The Academy Of Breastfeeding Medicine, 10*(1), 20-25. doi:10.1089/bfm.2014.0093

Grassley, J. (2010). Adolescent mothers' breastfeeding social support needs. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 39*(6), 713-722.

Gray, J. (2013). Feeding on the web: Online social support in the breastfeeding context. *Communication Research Reports, 30*(1), 1-11.

Greaves, K. (2016). Computer-aided qualitative data analysis of social media for teachers and students in legal education. *The Law Teacher, 50*(1), 24-43. doi:10.1080/03069400.2016.1146462

Greene, J., Caracelli, V., & Graham, W., (1989). Toward a conceptual framework for mixed-methods evaluation designs. *Educational and Evaluation Policy Analysis, 11*(3), 255-74.

Greene, J. A., Choudhry, N. K., Kilabuk, E., & Shrank, W. H. (2011). Online Social Networking by Patients with Diabetes: A Qualitative Evaluation of Communication with Facebook. JGIM: Journal of General Internal Medicine, 26(3), 287-292. doi:10.1007/s11606-010-1526-

Gross, T., Powell R., Anderson, A., Hall, J., Davis, M., & Hilyard, K. (2015). WIC peer counselors' perceptions of breastfeeding in African American women with lower incomes. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*, *31*(1), 99-110.

Hampton, K., Goulet, I., Raine, L. & Purcell, K. (2011). Social networking sites and our lives. Retrieved from http://www.pewinternet.org/Reports/2011/Technology-and-social-networks.aspx

Henderson, J., & Redshaw, M. (2011). Midwifery factors associated with successful breastfeeding. *Child Care Health Dev, 37*(5), 744-753. doi:10.1111/j.1365-2214.2010.01177.x

Hether, H., Murphy, S., & Valente, T. (2016). A social network analysis of supportive interactions on prenatal sites. *Digital Health*. 2.

House, J. S. (1981). *Work Stress and Social Support*. Reading, Mass: Addison-Wesley.

Holtz, B., Smock, A., & Reyes-Gastelum, D. (2015). Connected motherhood: Social support for moms and moms-to-be on Facebook. *Telemedicine & e-Health, 21*(5):415-421.

Ismail, T., Muda, W., & Bakar, M. (2016). The extended Theory of Planned Behavior in explaining exclusive breastfeeding intention and behavior among women in Kelantan, Malaysia. *Nutrition Research and Practice*, *10*(1), 49-55.

Jefferson, U. (2014). Infant feeding attitudes and breastfeeding intentions of Black college students. *Western Journal of Nursing Research, 36*(10), 1338-1356.

Jin, S. V., Phua, J., & Lee, K. M. (2015). Telling stories about breastfeeding through Facebook: The impact of user-generated content (UGC) on pro-breastfeeding attitudes. *Computers in Human Behavior, 46*, 6-17. doi:http://dx.doi.org/10.1016/j.chb.2014.12.046

Johnson, A., Kirk, R., Rosenblum, K. L., & Muzik, M. (2015). Enhancing breastfeeding rates among African American women: A systematic review of current psychosocial interventions. *Breastfeeding Medicine, 10*(1), 45-62. doi:10.1089/bfm.2014.0023

Johnson-Bailey, J. (2004). Enjoining positionality and power in narrative work: Balancing contentious and modulating forces. In K. deMarrais & S. Lapan (Eds.), *Foundations for research: Methods of inquiry in education and the social sciences*. Mahwah, NJ.

Jones, K., Power, M., Queenan, J., & Schulkin, J. (2015). Racial and ethnic disparities in breastfeeding. *Breastfeeding Medicine*, *10*(4), 186-197.

Kaplan, A. M., & Haenlein, M. (2010). *Users of the world, unite! The challenges and opportunities of Social Media*.

Kaunonen, M., Hannula, L., & Tarkka, M.-T. (2012). A systematic review of peer support interventions for breastfeeding. *Journal of Clinical Nursing 21*(13/14), 1943-1954. doi:10.1111/j.1365-2702.2012.04071.x

Kauppi, C., & Rashmi, G. (2008). Development of cybermoms: A computer-mediated peer support group to address the needs of young mothers. *New Scholarship in the Human Services*, 7(2), 1-18.

Kim, J., Fiese, B., & Donovan, S. (2017). Breastfeeding is natural but not the cultural norm: A mixed-methods study of first-time breastfeeding, African American mothers

participating in WIC. *Journal of Nutrition Education and Behavior*, *49*(Supplement 2), S151- S161.e151. doi:10.1016/j.jneb.2017.04.003

Kleiber, P. (2004). *Focus Groups: More Than a Method of Qualitative Inquiry* (K. DeMarrais & S. Lapan Eds.). Mahwah, N.J: Erlbaum Associates.

Kontos, E., Emmons, K., Puleo, E. & Viswanath (2010). Communication inequalities and public health implications of adult social networking site use in the United States. *Journal of Health Communication, 15*(3), 216-235.

Kornides, M., & Kitsantas, P. (2013). Evaluation of breastfeeding promotion, support, and knowledge of benefits on breastfeeding outcomes. J Child Health Care, 17(3), 264-273. doi:10.1177/1367493512461460

Lau, Y., Htun, T. P., Tam, W. S. W., & Klainin-Yobas, P. (2016) Efficacy of e-technologies in improving breastfeeding outcomes among perinatal women: A meta-analysis. *Maternal & Child Nutrition*, *12*, 381–401.

Liamputtong, P. (2011). Focus group methodology: Theory and ethics focus group methodology: Principles and practice. Los Angeles: Sage Publications.

Logsdon, M., Bennett, G., & Crutzen, R. (2014). Preferred health resources and use of social media to obtain health and depression information by adolescent mothers. *Journal of Child Adolescent Psychiatry and Nursing, 27*(4), 163-168.

Madison, D. (2005). Critical ethnography: Methods, ethics, and performance. Thousand Oaks, CA: Sage Publications.

Maxwell, J. (2013). *Qualitative Research Design: An Interactive Approach*. Los Angeles: Sage.

McCann, A. & McCulloch, J. (2012). Establishing an online and social media presence for your IBCLC practice. *Journal of Human Lactation, 28*(4), 450-454. doi:10.1177/0890334412461304

McCarter-Spaulding, D., & Gore, R. (2012). Social support improves breastfeeding self-efficacy in a sample of Black women. *Clincal Lactation. 3*(3), 114-117.

McDaniel, B., Coyne, S., & Holmes, E. (2012). New mothers and media use: Associations between blogging, social networking, and maternal well-being. *Maternal and Child Health Journal, 16*(7), 1509-1517.

Meedya, S., Fahy, K., & Kable, A. (2010). Factors that positively influence breastfeeding duration to 6 months: A literature review. *Women Birth, 23*(4), 135-145. doi:10.1016/j.wombi.2010.02.002

Meng, J., Martinez, L., Holmstrom, A., Chung, M., & Cox, J. (2017). Research on social networking sites and social support from 2004 to 2015: A narrative review and directions for future research. *Cyberpsychology, Behavior and Social Networking, 20*(1), 44-51. doi:10.1089/cyber.2016.0325

Merolli, M., Gray, K. & Martin-Sanchez, F. (2013). Health outcomes and related effects of using social media in chronic disease management: A literature review and analysis of affordances. *Journal of Biomedical Informatics, 46*(6), 957-969.

Mitchell-Box, K. & Braun, K. (2013). Impact of male-partner-focused interventions on breastfeeding initiation, exclusivity, and continuation. *Journal of Human Lactation, 29*(4), 473-479. Doi:10.1177/0890334413491833

Mitchell, S., Godoy, L., Shabazz, K., & Horn, I. (2014). Internet and mobile technology use among urban African American parents: Survey study of a clinical population. *Journal of Medical Internet Res*earch, *16*(1), e9-e9.

Mitra, A., Khoury, A., Hinton, A., & Carothers, C. (2004). Predictors of breastfeeding intention in low-income women. *Maternal and Child Health Journal*, 8(2), 65-70.

Montano, D., & Kaspryzk, D. (2015). Theory of Reasoned Action, Theory of Planned Behavior, and the Integrated Behavior Model. In: Glanz, K, Rimer, B., & Viswanath, K., (eds.). *Health behavior: Theory, research, and practice.* San Francisco: Jossey-Bass.95-123.

Newby, R., Brodribb, W., Ware, R. S., & Davies, P. S. W. (2015). Internet Use by First-Time Mothers for Infant Feeding Support. *Journal of Human Lactation, 31*(3), 416-424 419p. doi:10.1177/0890334415584319

Nguyen, P. H., Keithly, S. C., Nguyen, N. T., Nguyen, T. T., Tran, L. M., & Hajeebhoy, N. (2013). Prelacteal feeding practices in Vietnam: challenges and associated factors. *BMC Public Health, 13*, 932. doi:10.1186/1471-2458-13-932

Nguyen, P., Kim,s., Nguyen, T., Hajeebhoy, N., Tran, L., Alayon, S.,…Menon, P. (2016). Exposure to mass media and interpersonal counseling has additive effects on exclusive breastfeeding and its psychosocial determinants among Vietnamese mothers. *Maternal Child Nutrition, 12*(4), 713-725. Doi:10.1111/mcn.12330

Niela-Vilen, H., Axelin, A., Melender, H., Loyttyniem, E., & Salanter, S. (2016). Breastfeeding preterm infants – A randomized controlled trial of the effectiveness of an Internet-based peer-support group. *Journal of Advanced Nursing, 72*(10), 2495–2507.

Nolan, S., Hendricks, J., & Towell, A. Social network sites (SNS); exploring their uses and associated value for adolescent mothers in Western Australia in terms of social support provision and building social capital. *Midwifery, 31*(9), 912-919.

Obeng, C. & Emetu, R. (2015). African American women's perception and experiences about breastfeeding. *Frontiers in Public Health, 3*. Doi:10:3389/fpubh.2015.00273

Oh, H., Lauckner, C., Boehmer, J., Fewins-Bliss, R.., & Li, K. (2013). Facebooking for health: An examination into the solicitation and effects of health-related social support on social networking sites. *Computers in Human Behavior, 29*(5), 2072-2080.

Patton, M. Q. (2015). *Qualitative research & evaluation methods : integrating theory and practice*: Thousand Oaks, California : SAGE Publications, Inc., [2015] Fourth edition.

Pediatrics, A. (2012). Breastfeeding and the use of human milk. *Pediatrics, 129*(3), e827-e841.

Persad, M. D., & Mensinger, J. L. (2008). Maternal breastfeeding attitudes: Association with breastfeeding intent and socio-demographics among urban primiparas. *Journal of Community Health, 33*(2), 53-60.

Pew Research Center. (2016). Social media update 2016. Facebook usage and engagement is on the rise, while adoption of other platforms holds steady. http://www.pewinternet.org/2016/11/11/social-media-update-2016/

Piwoz, E. G., & Huffman, S. L. (2015). The impact of marketing of breast-milk substitutes on WHO-recommended breastfeeding practices. Food And Nutrition Bulletin, 36(4), 373-386. doi:10.1177/0379572115602174

Powell, R., Davis, M., & Anderson, A. K. (2014). A qualitative look into mother's breastfeeding experiences. *Journal of Neonatal Nursing, 20*(6), 259-265. doi:10.1016/j.jnn.2014.04.001

Prasad, P. (2015). *Crafting Qualitative Research: Working in the Postpositivist Traditions*. New York: Routledge.

Reeves, E. A., & Woods-Giscombe, C. L. (2015). Infant-feeding practices among African American women: social-ecological analysis and implications for practice. *J Transcult Nurs, 26*(3), 219-226. doi:10.1177/1043659614526244

Reeves, E., & Woods-Giscombe, C. (2015). Infant-feeding practices among African American women: Social-ecological analysis and implications for practice. *Journal of Transcultural Nursing, 26*(3), 219-226. doi:10.1177/1043659614526244

Renfrew, M., McCormick, F., Wade, A., Quinn, B., & Dowswell, T. (2012). Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database Systems Review, 5,* Cd001141. doi:10.1002/14651858.CD001141.pub4

Ryan, K., Gandha, T., Culbertson, M., & Carlson, C. (2014). Focus group evidence: Implications for design and analysis. *American Journal of Evaluation, 35*(3), 328-345.

Schreier, M. (2012). *Qualitative content analysi in practice*. Los Angeles, CA: Sage Publications.

Schwartz, E., & Nothnagle, M. (2015). The maternal benefits of breastfeeding. *American Family Physician, 91*(9), 603-604.

Services, U. (2011). The surgeon general's call to action to support breastfeeding. Retrieved from Washington, DC.

Snelson, C. (2016). Qualitative and mixed methods social media research: A review of the literature. *International Journal of Qualitative Methods,* 1-15. doi:10.1177/1609406915624574

Spencer, B., Wambach, K., & Domain, E. (2015). African American women's breastfeeding experiences: Cultural, personal, and political voices. *Quality Health Research Journal, 25*(7), 974-987. doi:10.1177/1049732314554097

Srinivas, G., Benson, M., Worley, S., & Schulte, E. (2014). A clinic-based breastfeeding peer counselor intervention in an urban, low-income population. *Journal of Human Lactation, 31*(1), 120-128. doi:10.1177/0890334414548860

Swanson, V., & Power, K. G. (2005). Initiation and continuation of breastfeeding: Theory of Planned Behaviour. *Journal of Advanced Nursing, 50*(3), 272-282.

Swindle, T., Ward, W., Whiteside-Mansell, L., Bokony, P., & Pettit, D. (2014). [Research Article] Technology use and interest among low-income parents of young children: Differences by age group and ethnicity. *Journal of Nutrition Education and Behavior*, 46, 484-490.

Thompson, J. M. D., Tanabe, K., Moon, R. Y., Mitchell, E. A., McGarvey, C., Tappin, D., . . . Hauck, F. R. (2017). Duration of Breastfeeding and Risk of SIDS: An Individual Participant Data Meta-analysis. *Pediatrics, 140*(5), 1-9. doi:10.1542/peds.2017-1324.

Tracy, S. (2010). Qualitative quality:Eight “big tent” criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851.doi:10.1177/1077800410383121

Tuan, N. T., Nguyen, P. H., Hajeebhoy, N., & Frongillo, E. A. (2014). Gaps between breastfeeding awareness and practices in Vietnamese mothers result from inadequate support in health facilities and social norms. *J Nutr, 144*(11), 1811-1817.

United States Breastfeeding Committee. (2014). Health people 2020: Breastfeeding objectives. Retrieved on from

http://www.usbreastfeeding.org/LegislationPolicy/FederalPoliciesInitiatives/HealthyPeople2020BreastfeedingObjectives/tabid/120/Default.aspx

Watson, L., Robinson, D., Dispenza, F., & Nazari, N. (2012). African American women's sexual objectification experiences: A qualitative study. *Psychology of Women Quarterly*, *36*(4), 458-475.

West, J., Hall, C., Hanson, C., Thackeray, R., Barnes, M., Neuger, B., & McIntyre, E. (2011). Breastfeeding and blogging: Exploring the utility of blogs to promote breastfeeding. *American Journal of Health Education*, *42*(2), 106-115.

Wilkinson, S. (1998). *Focus groups in feminist research: Power, interaction, and the co-construction of meaning.* Paper presented at the Women's studies international forum.

Wolynn T. (2012). Using social media to promote and support breastfeeding. *Breastfeeding Medicine : The Official Journal of the Academy of Breastfeeding Medicine*, *7*(5), 364-365.

Xinlin, C., Yang, L., Toso-Salman, J., Yvonne, C., Schear, R., & McGoldrick, D. (2016). Social support within online communities: Internet reach and content analysis of a cancer anti-stigma Facebook page in Mexico. *Global Media Journal: American Edition*(S1), 1-9.

Yukia, Q., & Yuping, M. (2010). A content analysis of online social support behaviors of overseas Chinese prenatal and postnatal women. *China Media Research*, *6*(4), 43-54.

Zhang, N., Campo, S., Yang, J., Janz, K., Snetselaar, L., & Eckler, P. (2015). Effects of social support about physical activity on social network sites: Applying the Theory of Planned Behavior. *Health Communication*, *30*(12), 1277-1285.