LATCHING ON TO INFORMATION: EFFECTS OF INFORMATION-SEEKING BEHAVIOR ON BREASTFEEDING SELF-EFFICACY

A Dissertation
Submitted to the Graduate Faculty
of the
North Dakota State University
of Agriculture and Applied Science

By

Amy Elaine Duchsherer

In Partial Fulfillment of the Requirements
for the Degree of
DOCTOR OF PHILOSOPHY

Major Department:
Communication

December 2019

Fargo, North Dakota

North Dakota State University
Graduate School

Title

Latching on to Information: Effects of Information-Seeking Behavior on Breastfeeding Self-Efficacy

By

Amy Elaine Duchsherer

The Supervisory Committee certifies that this ***disquisition*** complies with North Dakota State University's regulations and meets the accepted standards for the degree of

DOCTOR OF PHILOSOPHY

SUPERVISORY COMMITTEE:

Carrie Anne Platt, Ph.D.
Chair

Robert Mejia, Ph.D.

David Westerman, Ph.D.

Sean Brotherson, Ph.D.

Approved:

2/18/2020
Date

Stephenson J. Beck, Ph.D.
Department Chair

ABSTRACT

Recommendations on breastfeeding in the United States suggest that infants should be exclusively breastfed for six months with continued breastfeeding in conjunction with complementary foods for at least one year. However, only 22.30% of women are exclusively breastfeeding when their infant reaches the age of six months, which indicates the existence of barriers hindering prolonged breastfeeding. In this study, I consider the factors related to information-seeking behavior that may influence breastfeeding rates. Specifically, I focus on the relationship between the sources a woman selects to receive information about breastfeeding and her level of breastfeeding self-efficacy, which has been shown to be a significant predictor of breastfeeding success. A sample of 222 breastfeeding women was recruited for participation in this study. Participants completed a mixed-methods survey, and the results of the survey were analyzed using applied thematic analysis, correlation, and regression analysis. Women who participated in this study used non-expert online information sources most frequently when searching for information related to breastfeeding. Criteria women used most frequently when choosing an information source included source affordances (e.g., convenience and quickness), information characteristics (e.g., variety of information and information quality), and source characteristics (e.g., source expertise). Hypotheses for this study posited a relationship between source characteristics (i.e., expertise, trustworthiness, goodwill, and social support) and breastfeeding self-efficacy; all hypotheses were supported, and expertise, trustworthiness, goodwill, and social support were found to have a significant positive relationship with breastfeeding self-efficacy. Source expertise was found to be the strongest predictor of breastfeeding self-efficacy among those that were measured for this study; however, it is not an individual significant predictor when modeled alongside the remaining source characteristics.

Implications of this study stress the importance of access to quality information related to breastfeeding and continued research on the development of breastfeeding self-efficacy in various demographic populations and over the span of a breastfeeding relationship.

ACKNOWLEDGMENTS

St. Catherine of Siena is credited with saying, “Be who God meant you to be and you will set the world on fire.” While working toward my Ph.D. has been a challenging experience, the freedom and joy I have experienced while pursuing an academic career are unparalleled to anything I have encountered previously in my life. It is no happy accident that I have arrived where I am today, and so it is with humble gratitude that I first recognize God’s providence and care during this process.

Christopher, my loving husband: You have given up countless evenings and weekends so that I could spend quality time with my computer. You are unwavering in your love and support for me, and you never lose hope that I will accomplish what needs to be done. You remain a kind and generous husband and father despite the trials these past years have held. I love you and am deeply grateful for the sacrifices you have made so that I could fulfill this dream.

Dominic, my precious son: You are my research inspiration. You have sacrificed in ways that you will never fully understand and have remained a source of motivation for me to complete this degree. I pray you will not remember me as a graduate student.

Carrie Anne, my brilliant advisor: There are no words to fully express the gratitude I hold for you in my heart. You have been an incredible mentor and advisor; what I owe you I could never repay. Thank you for pushing me outside of my comfort zone, keeping my negativity in check, and being an unfailing source of encouragement and support. I am a better teacher and scholar because of your expertise.

Robert, Dave, and Sean, my wonderful committee members: You have all been a valuable resource during my exam and dissertation process. Thank you for the time you have devoted to serving on my committee and helping me grow as a scholar. Thank you most of all

for letting me fail—it is in these times that I was able to see my strength, rise again, and create work that was far better than where I began.

My colleagues: So many people have touched my heart during my graduate studies at NDSU. However, I am uniquely indebted to those who helped me be a better mother, scholar, and teacher during this time. Thank you especially to Kelli (for mothering Dominic while I wrote final papers, letting me room with you at conferences even though I tuck you in, and for being an remarkable friend and co-author), Jenna (for hosting workdays and being an inspiration for me to keep moving forward even when I felt like stopping), Kelsey (for helping me talk through research problems and your quantitative brilliance), Mal (for understanding the unique challenge of completing a doctoral degree with young children in tow and for teaching me the value of a good study taco), and Shweta (for showing me the value of bad first drafts, helping me work through the difficult first pages of this dissertation, and providing me with writing inspiration).

Finally, I extend my gratitude to all the faculty and staff in the Communication department at NDSU. I am in awe of the many wonderful opportunities I was given in this department, but none more than to serve our undergraduates as a teacher and advisor. The support and advice I received from faculty members including Dr. Melissa Vosen-Callens, Dr. Stephenson Beck, and Dr. Cat Kingsley Westerman will serve me well as I move forward in my academic career. The administrative support and holiday spirit provided by Kelly Paynter has forever spoiled me—I fear I will soon learn how to fill out travel funding requests and Halloween certainly wasn't the same this year without a headless student waiting in the foyer.

Let us begin.

TABLE OF CONTENTS

CHAPTER ONE. INTRODUCTION

New mothers are faced with endless decisions about how they will raise their children. The information available to new mothers is plentiful, and women in the transition to motherhood are keen to take in information. Research indicated that women in transition to motherhood seek information about parenting at least weekly and as frequently as daily (Kamali et al., 2018; Ogunmodede, Ebijuwa, & Oyetola, 2013). This uptick in information seeking plays an important role in the anticipatory parenthood of a woman, a time when she forms her identity as a mother (Mercer, 2004). Ultimately, the information a woman receives likely assists her in making decisions about childrearing practices. Among topics of concern for new mothers is the decision of how to feed an infant, which is complicated by an array of factors including personal, social, cultural, informational, and environmental (Kong & Lee, 2004).

Statement of Research Problem

The American Academy of Pediatrics (AAP) recommends that infants are exclusively breastfed for six months with "continued breastfeeding alongside the introduction of complementary foods for at least 1 year," but many women who wish to breastfeed struggle to meet these benchmarks. Only 22.30% of women breastfeed exclusively (i.e., breast milk as the infant's only source of nutrition) until their infant is six months of age (Centers for Disease Control and Prevention, CDC, 2016, p. 2). Many women who breastfeed for shorter durations of time originally planned to breastfeed longer (Avery et al., 1998; Lutsiv et al., 2013); this indicates that many mothers who initiate breastfeeding are either unwilling or unable to continue this practice.

Noting that most demographic and structural factors affecting breastfeeding duration are not able to be easily modified, researchers can help women persist with breastfeeding by

focusing on "predisposing factors that are amenable to supportive interventions" (Blyth et al., 2002, p. 279). I argue that one factor which can be addressed with supportive intervention is information-seeking behavior. Wilson (2000) defines information-seeking behavior as "the purposive seeking for information as a consequence of a need to satisfy some goal" (p. 49). Deficiencies in information-seeking behavior may be detrimental to a woman's ability to persist through breastfeeding challenges. For example, if a woman is experiencing pain while feeding and cannot find information that meets her needs, she may choose to cease the breastfeeding relationship earlier than she originally intended.

Current research associated with maternal-related concerns stresses the importance of developing proper parenting skills (e.g., Walker & Riley, 2001), but little emphasis has been placed on the importance of teaching parents information literacy skills. The literature on breastfeeding (Grassley & Nelms, 2008) indicates that having realistic expectations about breastfeeding improves the likelihood of breastfeeding success; therefore, limited information literacy might hinder a woman's ability to make properly informed decisions about initiating or continuing a breastfeeding relationship with her baby. Consequently, I consider factors related to information behavior that may influence breastfeeding tenure in this study. Specifically, I examine the relationship between the sources a woman uses most often to find information about breastfeeding and her level of breastfeeding self-efficacy, which has been shown to be a significant predictor of long-term breastfeeding.

State of Current Research

Information Seeking

Information is a powerful force, one that has been studied across many disciplines. Information seeking is a purposeful process of accessing information to fulfill a specific need

(Wilson, 2000). Research regarding the transition to motherhood highlights the importance of the information-seeking process during this time in a woman's life (Bartholomew et al., 2012; Deutsch et al., 1988; Gibson & Hanson, 2013; Mercer, 2004). Typically, women begin searching for information once they find out they are pregnant—sometimes before—and continue the information-seeking process throughout pregnancy and into motherhood (Deutsch et al., 1988; Mercer, 2004). Because information seeking is an important part of the transition to motherhood, it is reasonable to argue that the sources a woman uses to find information about breastfeeding may impact her confidence in her ability to breastfeed.

Self-Efficacy

Breastfeeding self-efficacy plays an important role in a woman's ability to successfully meet her breastfeeding goals. Self-efficacy is an individual's confidence in their ability to successfully complete a task (Bandura, 1977, 1986). Bandura (1977, 1986) asserted that self-efficacy influences one's ability to persist when faced with adversity. When compared to individuals with low self-efficacy, those with high levels of self-efficacy experience fewer negative emotions and are better able to persevere when faced with challenges (Jerusalem & Mittag, 1995). Furthermore, individuals with high self-efficacy tend to conceptualize problems differently and be more confident in their abilities (Jerusalem & Mittag, 1995). The breastfeeding relationship can be especially difficult the first few weeks after initiation with issues such as an improper latch, fatigue, and pain cited as common concerns for new mothers (Feenstra et al., 2018; Larsen & Kronborg, 2013). Consequently, traits such as perseverance, self-confidence, and the ability to conceptualize and reframe problems are of particular importance during the early weeks of breastfeeding. In fact, a woman's level of breastfeeding self-efficacy is regarded as one of the most accurate predictors of breastfeeding tenure (Blyth et

al., 2002; Koerber, Brice, & Tombs, 2012; Meedya, Fahy, & Kable, 2010). Therefore, breastfeeding self-efficacy is identified as the dependent variable for this study.

Source Credibility

One factor that influences the reception of information from a source is the attitude of the audience toward the source. Source credibility is one measure frequently used to assess audience members' attitudes of a source. The three dimensions of source credibility frequently used within the field of communication include expertise, trustworthiness, and goodwill (see Myers, 2004; Rains, 2007; Westerman, Spence, & Van Der Heide, 2014). In relation to maternal information seeking, parents are most satisfied with the information they receive about their child's health when they perceive the sources provide reliable information, adequate care, and attention to their needs (Grimes, Forster, & Newton, 2014; Kostagiolas et al., 2013). These qualities correspond to the dimensions of source credibility used for this study. Information may be perceived as reliable because it is provided by an expert or trusted source. Similarly, adequate care and attention of an information source may be linked to perceptions of goodwill. McCroskey and Teven (1999) define the dimensions of expertise, trustworthiness, and goodwill in the following manner:

- Expertise is a measure of the source's perceived knowledge regarding a given topic.
- Trustworthiness estimates the receiver's perception of whether the source is motivated to be honest in relaying information.
- Goodwill considers whether the audience perceives that the information source has their best interest in mind when providing information about a given topic.

These dimensions have been used alone and in concert to assess the development of health-related habits (Phua, 2016) and the effect of online markers on the perceived credibility of a source (Westerman et al., 2014). Research in health information seeking suggests that

establishing source credibility improves the effectiveness of public service announcements disseminated online (Kareklas, Muehling, & Weber, 2015). Additionally, source credibility studied in the context of the delivery of breastfeeding messages has been found to improve "attitudes towards exclusive breastfeeding and the intention to engage in exclusive breastfeeding" (Hussein, Manna, & Cohen, 2014, p. 105). Because source credibility has been identified as a variable connected with attitudes about breastfeeding and intentions to breastfeed it is feasible that source credibility also plays a role in the building of breastfeeding self-efficacy. Each dimension of source credibility is measured independently; therefore, I evaluate source credibility using the dimensions suggested by McCroskey and Teven (1999) (i.e., expertise, trustworthiness, and goodwill) as independent variables in this study.

Social Support

The existing research on social support in the context of breastfeeding indicates that it is an important variable to consider when evaluating breastfeeding outcomes. Cobb (1976) defines social support as information that leads an individual to believe that they are "cared for and loved," are "esteemed and valued," or belong to a social system (p. 300). Social support is a variable that has been evaluated frequently in research evaluating health-related outcomes (e.g., Boyle et al., 2018; Nigah, Ajmal, & Abid, 2019; Simpson et al., 2006), and has also been studied extensively within the context of breastfeeding (e.g., Asiodu et al., 2016; Laugen, Islam, & Janssen, 2016; Maleki-Saghooni, Amel Barez, & Karimi, 2019). The importance of integrating social support with informational support has been recognized within health information seeking research (see Ivarsson et al., 2017; Liu, Yang, & Sun, 2019). The integration of social support and informational support has also been explored in previous breastfeeding research. Women participating in a study conducted in Ireland indicated that they felt the inclusion of social

support alongside informational support from lactation experts played a positive role in their decision to initiate and continue breastfeeding (Alberdi et al., 2018). This study adds to our understanding of social support's role together with informational support by considering how the level of social support received from an informational source (i.e., rather than receiving informational support and social support from separate sources) contributes to the building of breastfeeding self-efficacy. Therefore, social support is considered as an independent variable in this study.

Study Rationale and Significance

The influx of information that we encounter daily is growing in our modern society. Because information availability is vast, researchers must strive to understand the components of information literacy in our society. Skills of specific concern for this study include how individuals locate and assess information and how the information they choose influences their breastfeeding self-efficacy. Furthermore, these literacy skills may influence behavioral outcomes; outcomes related to breastfeeding are of particular interest in this study. This study will contribute to the existing body of literature related to information seeking, breastfeeding- and maternal-related issues, and breastfeeding self-efficacy by addressing how information-seeking behavior affects breastfeeding self-efficacy in four ways:

1) examining the sources women use most frequently to find information about breastfeeding,
2) exploring the factors that drive them to select those sources most often,
3) testing the relationships between a) source credibility, b) perceived social support, and c) breastfeeding self-efficacy, and

4) determining which source credibility characteristic (i.e., expertise, trustworthiness, goodwill, or social support) has the greatest influence on a woman's breastfeeding self-efficacy.

Numerous studies report the benefits of breastfeeding (American Academy of Pediatrics, 2012; Bartick & Reinhold, 2010; Chowdhury et al., 2015; Tashakori et al., 2012); however, there is debate over whether the benefits of breastfeeding have been overclaimed in previous research (Colen & Ramey, 2014; Rosin, 2009). Additionally, I acknowledge there are cases where breastfeeding may not be beneficial to the mother and/or child (e.g., women with perinatal mood and anxiety disorders or certain hormonal sensitivities; McIntyre, Griffen, & BrintzenhofeSzoc, 2018; Pope & Mazmanian, 2016) and situations where breastfeeding can be exceedingly difficult for the woman to maintain (e.g., early return to work or a lack of time and space to pump). I also recognize that women who are able to choose between breastfeeding and other infant-feeding options are in a relatively privileged position when compared to those who have no choice in their infant feeding practices (e.g., women who live in areas with poor water quality or are unable to afford formula for their child). With this context in mind, I focus on cases where women have decided that breastfeeding is the best option for their child. If women desire to breastfeed but have trouble in persisting with breastfeeding, it is a worthy topic of concern for researchers to address. I seek to support women who breastfeed through understanding how the information they receive about breastfeeding influences their confidence in persisting through breastfeeding challenges.

Organization of the Study

The contents of the remaining chapters in this dissertation are as follows. Chapter two outlines literature on breastfeeding and information-seeking behavior and further reviews

existing literature related to self-efficacy, source credibility, and social support. Chapter three delineates the methods used to collect and analyze data for this study. The results of the study are provided in chapter four. Finally, in chapter five I discuss the results of this study, implications of these findings, the study's limitations, and directions for future research related to this study.

CHAPTER TWO. REVIEW OF LITERATURE

Information is a powerful force. The volume of research related to information across multiple disciplines including communication (Metzger & Flanagin, 2013), business (Kaye, 1995), health care (Paul, Hendry, & Cabrelli, 2004), education (Rosman, Peter, Mayer, & Krampen, 2018), psychology (Wang, Song, & Zhao, 2019), and information sciences (Wilson, 2000) underscores the importance of information in our society. One population that experiences heightened information needs is women transitioning to motherhood.

Once a woman finds out she is pregnant, her information-seeking behaviors increase considerably. This inclination to seek information continues well into motherhood (Deutsch et al., 1988). Participants in a study conducted by Kamali et al. (2018) indicated that their information needs drove them to seek information about motherhood on a weekly basis, while another study (Ogunmodede et al., 2013) estimated women sought information about pregnancy and motherhood as frequently as daily.

Breastfeeding is a maternal issue that provides a unique context to study the impact of information on a mother's parenting practices. Mothers in a study conducted by Leurer and Misskey (2015) identified information gaps for a variety of breastfeeding topics such as a proper latch, milk production, and feeding logistics including duration and frequency of feedings. Based on the information provided by 191 participants, Leurer and Misskey (2015) suggested that women might be at risk for ceasing breastfeeding early when they feel they have received inadequate information about breastfeeding (Leurer & Misskey, 2015). Therefore, it makes sense that the information a woman receives about breastfeeding plays an important role in her decision to initiate and continue breastfeeding.

The attitude of an audience toward the source providing information is widely accepted as a factor that influences the desired outcome of information. A source's credibility is one factor that impacts an audience's opinion of a source (Hovland & Weiss, 1951). When an audience perceives a source to be highly credible, there is typically a positive relationship between the message being delivered and the audience members' behavioral intentions (Yoon, Kim, & Kim, 1998). Based on this knowledge, source credibility is a factor of interest when considering a woman's information seeking related to breastfeeding.

Another factor that may influence a woman's ability to reach her breastfeeding goals is the amount of social support she perceives she receives from an information source. Grassley and Nelms (2008) found that participants were more confident in their abilities to breastfeed when they had at least one individual who made them feel supported and offered quality breastfeeding information. Additional research also supports the link between social support and breastfeeding success (Faridvand et al., 2017; Maleki-Saghooni et al., 2019).

The link between levels of social support and psychological effects is well supported. For example, a cross-sectional study of 179 patients on long-term dialysis indicated that individuals with higher levels of social support were less likely to experience depressive symptoms than patients who reported receiving less social support (Pan, Hung, Chen, Lu, Shih, & Huang, 2019). It has also been suggested that social support acts as a buffer to reduce stress among cancer patients (Nigah et al., 2019). Nigah et al. (2019) claimed that this reduction of stress may aid the recovery of patients receiving chemotherapy and radiation. The findings of Nigah et al. (2019) indicate that the psychological effects of social support may translate into tangible health outcomes and behaviors.

Within the context of breastfeeding women, tangible outcomes are often measured by breastfeeding 'success' (e.g., initiation rates, levels of breastfeeding exclusivity, and breastfeeding tenure); this is also typical in the research encompassing social support and breastfeeding. Laugen et al. (2016) analyzed data from the Canadian Community Health Survey (n = 2133) and found that higher levels of support from a woman's partner increased the likelihood of successfully breastfeeding exclusively. Qualitative data from the same study supported previous findings that peer group support can positively influence breastfeeding exclusively (Brown & Lee, 2011; Laugen et al., 2016). The research currently available considering the relationship between social support and breastfeeding outcomes largely focuses on the interpersonal networks of a woman; however, few studies consider how informational support influences a woman's breastfeeding success. Thus, the social support a woman receives from her most frequently used source for breastfeeding-related information is considered in this study.

The final component of interest in this study is breastfeeding self-efficacy. Breastfeeding self-efficacy is currently the best-known predictor of breastfeeding tenure (Blyth et al., 2002; Dunn et al., 2006; Grassley & Nelms, 2008; Koerber et al., 2012; Meedya et al., 2010), which makes this factor a rational choice for inclusion in this study. Researchers interested in breastfeeding self-efficacy have largely focused on breastfeeding self-efficacy's relationship with specific breastfeeding outcomes including breastfeeding exclusivity (Minas & Ganga-Limando, 2016) and the likelihood of breastfeeding duration (Dunn et al., 2006). Limited studies have been conducted on factors that influence breastfeeding self-efficacy. Chezem, Friesen, and Boettcher (2003) suggested that women with increased knowledge of breastfeeding tend to have

higher levels of breastfeeding self-efficacy. Therefore, I explore the relationship between information-seeking behavior and a mother's breastfeeding self-efficacy.

This chapter will discuss the key components that build the claims in this dissertation. First, I provide the contextual framework necessary for this study by reviewing literature related to breastfeeding and information. Then factors of specific interest to this study are reviewed including self-efficacy, source credibility, and social support.

Breastfeeding

Breastfeeding rates in the United States remain relatively low compared to the guidelines suggested by the American Academy of Pediatrics (AAP). The AAP suggests that infants should be exclusively breastfed for 6 months "with continued breastfeeding alongside introduction of complementary foods for at least 1 year" (Centers for Disease Control and Prevention [CDC], 2016, p. 2). Breastfeeding initiation (i.e., providing breast milk to an infant after birth) rates in the United States are relatively high (81.10%); however, only 51.80% of women still breastfeed at six months, and just 22.30% meet the recommendation of exclusively breastfeeding (i.e., the only source of nutrition an infant receives is breast milk) for six months (CDC, 2016). These figures indicated that the rates of breastfeeding in the United States diminish considerably within the first six months of an infant's life. This decline in breastfeeding rates suggests that there is value in studying how women seek information about breastfeeding, particularly when they encounter challenges that threaten their ability to persist.

Breastfeeding Barriers

Data from a 1998 study indicated that most women who had very short durations of breastfeeding originally intended to breastfeed longer (Avery et al., 1998). This suggests that a majority of mothers have the intention to breastfeed but are either unwilling or unable to persist

in this endeavor. Several barriers contribute to a woman's decision to cease breastfeeding before the recommended one-year period. Factors that influence breastfeeding duration include support from healthcare professionals and a woman's social system (Sikorski et al., 2002; Taveras et al., 2004), hospital practices after delivery (DiGirolamo, Grummer-Strawn, & Fein, 2008), strategies for returning to work (Fein, Mandal, & Roe, 2008), unrealistic media representations of breastfeeding (Foss, 2013), and individual barriers such as improper latch or perceived/actual low milk supply (Odom et al., 2013). Furthermore, advertising used by the infant formula industry is often intentionally designed to erode mothers' confidence in their ability to persist through difficulties in the breastfeeding relationship (Allers, 2017). Several of the barriers identified by previous research (e.g., social support, media portrayals of breastfeeding, and advertising) are related to the communication/information a woman receives about breastfeeding, but individualistic characteristics also play an important role in a woman's choice/ability to breastfeed.

Premature breastfeeding cessation has also been linked with various demographic characteristics (e.g., young age, lower education levels, lower socioeconomic status, and race) (Dennis, 2002; DiGirolamo et al., 2008) and structural factors including maternity leave policies (Andres et al., 2016) and cultural practices related to gendered work (Tampah-Naah, Kumi-Kyereme, & Amo-Adjei, 2019). A woman's ability and/or choice to breastfeed according to the guidelines recommended by the AAP is compounded by countless factors. The factors affecting a woman's breastfeeding tenure may or may not be within her control. Blyth et al. (2002) argued that focusing on factors within a woman's control is imperative because these factors can be amended by the woman and are more likely to contribute to improving a woman's breastfeeding behaviors.

Information

One such amendable factor is the information a woman receives about breastfeeding. Providing accurate, complete, and consistent information to women as they transition to motherhood may lessen the information gap between affluent or socially privileged women and women who are disadvantaged either socially or financially. For example, better information about expressing breast milk and the laws and regulations associated with workplace breastfeeding accommodations may empower women to continue breastfeeding longer even when separated from their infants. Information may seem inconsequential when compared to structural factors such as securing better parental leave policies (de Lauzon-Guillain et al., 2019) or providing more positive birthing experiences for women (Smith, 2007), but availability of information is a factor that is relatively easy to improve in order to make the process of breastfeeding better for women who desire to initiate and continue a breastfeeding relationship with their child.

Information Seeking

The information a woman receives about breastfeeding is one factor that may play a role in a woman's decision to breastfeed. Information seeking is a purposeful process of accessing information to fulfill a specific need (Wilson, 2000). The process of information seeking is instrumental during the transition to motherhood (Bartholomew et al., 2012; Deutsch et al., 1988; Gibson & Hanson, 2013; Mercer, 2004). Women begin the search for information early—often once they find out they are pregnant, but sometimes pre-pregnancy—and continue throughout pregnancy and into motherhood (Deutsch et al., 1988; Mercer, 2004). Because information seeking is an important element of the transition to motherhood, it is reasonable to argue that the

sources a woman uses to find information about breastfeeding may be of particular interest when considering factors that help a woman meet her breastfeeding goals.

Sources of Maternal Information Seeking

With the prevalence of digital technologies, we are seeing a shift in the way individuals access information. Several contemporary researchers (Fox & Duggan, 2013; Herbert, Makopoulos, & Lawhon, 2016; Jacobs, Amuta, & Jeon, 2017) have found that online information seeking is becoming prevalent especially within health-related contexts. The use of the Internet to find information about health-related issues is a common practice in today's mediated society. In 2013, 72% of individuals who use the Internet reported using online resources to find information about health information within the previous year (Fox & Duggan, 2013). A study conducted by Health Union found that 98% of survey respondents who were active social media users had read articles or watched videos related to health-related information online within the past six months (Herbert et al., 2016).

For many health-related variables, individuals have shifted away from interpersonal sources in favor of online platforms. One reason for this shift may be that online platforms afford users the ability to gain access to information about health care in a way that is convenient, private, and cost-effective (Quinn, Bond, & Nugent, 2017). However, whether the trend of preference for online sources holds true for women transitioning to motherhood is debatable. While research by some (Heisler & Butler Ellis, 2008; Jang, Dworkin, & Hessel, 2015; Walker & Rudi, 2014) suggests that women are turning to online sources more frequently for information about motherhood, other research runs counter these findings.

Instead, several studies indicate that women seeking information about motherhood tend to consult a variety of information sources. A study of 63 low-income women eligible for the

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program indicated that they most preferred to receive information from interpersonal sources such as family members (Song et al., 2013). Health professionals were a source also frequently used as information sources with Internet sources being the least-frequently used sources (Song et al., 2013). Survey data collected from 400 Iranian women residing in Kerman, Iran also indicated that women consulted health care professionals as a preferred source of information related to maternal concerns, but also designated the Internet as a favored source for women searching for information related to their pregnancy, childbirth, and postnatal needs (Kamali et al., 2018). The preference for health professionals in this study may be connected to the availability of health professionals to participants who enrolled in Song et al.'s (2013) study. An inclusion criterion for Song et al.'s study was that women be involved in one of three subsidized prenatal home visit programs provided by the local health department.

Still, some researchers suggest that a woman's preference for sources of information may be more contextual in nature. A study conducted with 472 women found that while women felt that healthcare professionals were the source they trusted most for information, they used other sources more frequently to find information about maternal-related issues (Dobele et al., 2017). Dobele et al. (2017) noted that individual demographic variables including age and level of education also played a role in a woman's preference of information source. Younger women were less likely to trust and use medical professionals as sources when compared with older mothers in the sample; women with more education were more likely to trust health professionals as sources of information than women with less education (Dobele et al., 2017). The type of health care a woman receives during pre- and post-natal periods may also influence her selection of maternal-related information sources.

Women who do not feel they are receiving the information they need from their primary source—traditionally medical professionals and other women who are mothers—may be more likely to consult additional information. Grimes et al. (2014) noted a difference in health care as a dividing factor for where women sought information related to pregnancy and motherhood. A cross-sectional self-report survey collected from 350 women revealed that women who received care from midwives tended to receive most of their parenting-related information from the midwife, while women under the care of a physician tended to seek information from the Internet more frequently. Grimes et al. (2014) argued that this difference may be related to women feeling that they are receiving inadequate attention and information during their prenatal doctor's appointments. It follows that if an individual feels their needs are met by an information source, they would not have reason to seek support beyond a given source; however, when an individual perceives their needs are not met, they would seek assistance elsewhere to ensure they are receiving adequate care.

Individuals may choose to consult additional sources to confirm information received from a primary source and provide more accurate information about a given topic. Parents of children who were admitted to a pediatric ward reported frequently seeking information beyond that provided by the pediatrician as a means to reduce anxiety about their child's condition (Kostagiolas, et al., 2013). These parents also noted that they had trouble finding quality information when searching the Internet regarding questions about their child's health. Kostagiolas et al. (2013) suggested that search engines may not be the preferred information-seeking tool for parents making health-related decisions for their children. Instead, parents in this study consulted medical professionals such as physicians for "accurate interpretation of online information as well as for evidence-based medical advice" (Kostagiolas et al., 2013, para. 37).

Similarly, when seeking information related to breastfeeding it appears women choose a variety of sources to meet their information needs.

Preliminary Data

Pilot data collected for this study supports the assertions made by previous researchers that women consult a variety of sources when seeking information related to breastfeeding. Women in a Facebook group for academic mothers were asked, "If you breastfed, what were your primary information sources?" A total of 302 comments were made on the post, with 257 of the comments containing information about sources women used regularly to access breastfeeding-information. Women typically shared that they used various sources for information about breastfeeding with many indicating they used a combination of source types.

All comments were copied from Facebook and pasted into an Excel document. Two-cycle thematic analysis was used to catalog the sources women commonly use to access information related to breastfeeding. During the first cycle of analysis, each comment was read and a column was created for each source mentioned in the comment with a "1" placed in the column each time this source was mentioned by a subsequent comment. Twenty-four unique sources (e.g., books, friends, lactation consultants, Facebook groups, and community health resources) of information were identified during first-cycle coding.

The twenty-four sources identified were then categorized by source characteristics. Six overarching source types were developed for use in this study reflecting whether a source's level of expertise (i.e., expert versus non-expert) and how the information is delivered (i.e., face-to-face, online, or print media). After each source was placed in an appropriate category, totals for each category were tabulated. The tabulated data reveals that the women in this pilot study most frequently sought information about breastfeeding from face-to-face sources (470 responses)

with a majority favoring expert sources (284 responses) over non-expert sources (186 responses). Online sources were also popular (200 responses) with expert sources (120 responses) being more commonly reported than nonexpert sources (80 responses). Print sources (54 responses) were reported throughout the data but were far less likely to be used than face-to-face or online sources.

The use of face-to-face sources for seeking breastfeeding-related information runs counter to existing research (e.g., Herbert et al., 2016; Jacobs et al., 2017) about other current health information seeking practices. Possible explanations for this disconnect include that (1) the women in the Facebook group are highly educated and may have greater access to lactation services and other knowledgeable professionals than other mothers, (2) women in early stages of breastfeeding have more frequent well-baby checks providing more access to health professionals, and (3) women view breastfeeding as a child-related health issue rather than a woman's health issue (in line with Kostagiolas et al., 2013). To better understand the sources women are accessing most frequently to find information about breastfeeding, I ask the following research question:

> RQ_1: Which sources do women most frequently use when searching for information related to breastfeeding?

Selection Criteria

I recently conducted interviews with breastfeeding women for another study that serves as pilot data for this dissertation. The interviews speak to where women access breastfeeding information and how they assess the information they are finding. To date, 21 women have completed interviews and indicate that they receive information from a variety of sources with participants most frequently acknowledging the use of a combination of lactation consultants and

online sources. Preliminary findings from these interviews suggest that women assess sources using a mixture of cognitive heuristics including checking to see if information is consistent across more than one source, looking at URL markers (e.g., .gov), and using 'gut instinct' to assess the quality of information they are receiving, which is consistent with work on information assessment criteria used to discern information credibility in online environments (Metzger & Flanagin, 2013; Wathen & Burkell, 2002). Certain sources such as lactation consultants and friends who have previously breastfed were viewed as sources that provide the most accurate information about breastfeeding, while women were most skeptical about information they found on the Internet. Previous research supports that women may favor sources that have authority gained from experiential knowledge such as mothers who have previously breastfed (Johnson, 2015). The data for the preliminary study were collected from women who attend a breastfeeding support group. Data from this study will collect more diverse perspectives on this subject and will work to document relationships between information seeking and breastfeeding self-efficacy.

Further, women in these interviews readily admit they use a combination of online and face-to-face sources to access information about breastfeeding and noted criteria they use to assess the information once they found it, but it is still unclear the criteria that drive women to select a source for use to find information about breastfeeding. This study will focus more clearly on selection criteria rather than assessment criteria. Therefore, I pose the following research question:

> RQ_2: What criteria do women use when selecting their most frequently used source for finding information related to breastfeeding?

Regardless of where they access information about breastfeeding, women in these interviews specifically express difficulty assessing breastfeeding-related information because the information they receive about breastfeeding is sometimes contradictory. When women encounter conflicting information, they tend to rely on heuristic-type strategies for assessing information mentioning tactics such as trusting a gut instinct, using information that is repeated from more than one source, and relying on trial and error to see which information works best for their breastfeeding relationship. Overall, the women participating in interviews appear to be most self-assured in their information use when they feel confident that they have received quality breastfeeding information from a source they trust. Therefore, it stands to reason that the source credibility of a given information source may play an important role in the development of breastfeeding self-efficacy.

Self-Efficacy

One factor that influences a woman's breastfeeding success is her level of self-efficacy related to breastfeeding. Self-efficacy is an individual's perception of his/her ability to successfully complete a task to the desired outcome (Bandura, 1977, 1986). Bandura (1977) asserts that the strength of individuals' conviction regarding their abilities influences their willingness and ability to cope with a given situation. More specifically, individuals with high levels of self-efficacy tend to conceptualize problems differently, be more confident in their abilities, are better able to persevere through challenging situations, and experience fewer negative emotions when faced with challenging situations than individuals who have low levels of self-efficacy (Jerusalem & Mittag, 1995). These traits are vital for women who are beginning to breastfeed because the breastfeeding relationship can be difficult especially during the first few weeks of an infant's life. Typical issues that arise in early breastfeeding include fatigue,

pain, damage to nipples, and difficulty with proper latch (Feenstra et al., 2018; Larsen & Kronborg, 2013). Therefore, it stands to reason that the confidence a woman has in her ability to breastfeed (i.e., breastfeeding self-efficacy) plays an important role in a woman's decision to initiate and continue breastfeeding.

Self-efficacy is built through three major mechanisms. These mechanisms include performance attainment, vicarious experience, and verbal persuasion (Bandura, 1977). In the context of breastfeeding, examples of these mechanisms include successfully breastfeeding (i.e., performance attainment), observing others have positive breastfeeding experiences (i.e., vicarious experience), and receiving affirmation and encouragement from others about breastfeeding (i.e., verbal persuasion).

Self-efficacy has been studied in a variety of contexts; self-efficacy is a factor especially prevalent in health-related research and is widely recognized as an important factor contributing to positive health outcomes. For example, a cross-sectional study involving 606 caregivers of patients with dementia-related illnesses such as Parkinson's and Alzheimer's disease found that individuals with higher levels of self-efficacy displayed lower levels of depressive symptoms (Park et al., 2019). Additionally, these individuals displayed better resilience to burdens related to their roles as caregivers, which Park et al. (2019) suggested may lead to the perception that challenges of caregiving being more manageable. Higher levels of self-efficacy have also been associated with better recovery for patients of total hip replacement (Brembo et al., 2017) and improvements in health status and cognitive function in patients with cancer (White et al., 2017). While self-efficacy can be assessed as a general trait, Benzies, Trute, and Worthington (2013) argued that self-efficacy is more effectively assessed when studied through the lens of a specific

context. With the importance of contextualization of self-efficacy in mind, I examine self-efficacy within the context of breastfeeding.

Breastfeeding Self-Efficacy

A woman's breastfeeding self-efficacy is consistently cited as one of the most crucial elements in breastfeeding persistence (Blyth et al., 2002; Dunn et al., 2006; Grassley & Nelms, 2008; Koerber et al., 2012; Meedya et al., 2010). Women with high levels of breastfeeding efficacy are "over seven times more likely to exclusively breastfeed their child for at least the first five months" than women who measure low on breastfeeding self-efficacy (Minas & Ganga-Limando, 2016, p. 9). Previous research has explored the impact of the individual mechanisms (i.e., performance attainment, vicarious experience, and verbal persuasion) on breastfeeding (Blyth et al., 2002; Hoddinott, Lee, & Pill, 2006); however, little research (see Chezem et al., 2003) has been conducted on factors that build a woman's breastfeeding self-efficacy and no known research has considered the potential impact information might have on the development of a woman's breastfeeding self-efficacy.

Information's Potential Bearing on Breastfeeding Self-Efficacy

The accuracy of information women receive about breastfeeding may play an important role in their development of breastfeeding self-efficacy. Grassley and Nelms (2008) used a framework of storytelling to conduct and analyze in-depth interviews with 13 women. Women who participated were asked to share a memorable story about breastfeeding their children. Grassley and Nelms (2008) argued that the open-ended format used in their interview guide allowed the authors to uncover the heart of breastfeeding experiences, which centered on maternal confidence related to breastfeeding. Participants felt more confident when they had at least one individual who they go to for support and information related to breastfeeding. Women

also shared that they were more confident about breastfeeding when "expectations were congruent with [their] actual experiences" (Grassley & Nelms, 2008, p. 855). Therefore, it is crucial that women receive information about breastfeeding that is consistent and of high quality to develop the most realistic expectations about breastfeeding. By forming more accurate beliefs about breastfeeding, women may be more confident in their abilities to persist through early challenges, ultimately leading to longer and more exclusive breastfeeding practices (Blyth et al., 2002; Dennis, 1999; Nichols et al., 2009).

However, women do not always have realistic expectations about the breastfeeding process. Li et al., (2008) note that factors commonly cited for early cessation of breastfeeding such as perceived or actual inadequate milk supply suggest that women may lack knowledge about what is "the normal process of lactation or technical difficulties in feeding" (p. 574). Because increased knowledge about breastfeeding has been linked to higher levels of breastfeeding self-efficacy (Chezem et al., 2003), it is important that information women receive about breastfeeding is complete and truthful.

Source Credibility

Communication scholars widely accept that an audience's attitude toward a communication source plays an important role in the effectiveness of communication. While there has been scholarly debate about which dimensions most accurately represent source credibility, the most widely accepted dimensions (e.g., Myers, 2004; Rains, 2007; Westerman et al., 2014) include expertise (i.e., a measure of the source's knowledge about a given topic), trustworthiness (i.e., whether the source is motivated to be honest in relaying information about a given topic), and goodwill (i.e., whether the source has an individual's best interest at heart when

providing information about a topic) (McCroskey & Teven, 1999). For purposes of this study, the dimensions outlined by work conducted by McCroskey and Teven (1999) will be used.

Previous research has focused heavily on the relationship between source credibility and the ability of messages to enact attitude change and behavioral intention (e.g., Hovland & Weiss, 1951; Sternthal, Phillips, & Dholakia, 1978; Yoon et al., 1998); however, limited research has been conducted on the link between source credibility and self-efficacy. Phua (2016) evaluated the indirect effects of source credibility in combinations with other variables (e.g., similarity and parasocial relationships) on the adoption of health values for overweight individuals and self-efficacy related to weight loss. This study indicates that source credibility may play a role in the development of self-efficacy in health-related issues. I do note that Phua focused solely on source expertise and did not explore the other dimensions (i.e., trustworthiness and goodwill) of source credibility; however, these dimensions are likely important pieces to understanding the role source credibility plays in the development of self-efficacy.

Trustworthiness and goodwill are likely important to the development of self-efficacy. As noted in research reviewed above (see Grimes et al., 2014; Kostagiolas et al., 2013) parents were most satisfied with information sources when they felt those sources were providing adequate care and attention to their needs (i.e., may be linked to perceived goodwill) and provided information that was reliable (i.e., may be related to the level of trust they placed in a source). To expand our understanding of how the dimensions of source credibility effect the development of self-efficacy, specifically breastfeeding self-efficacy, I suggest the following hypotheses:

H_1: Expertise will have a significant effect on breastfeeding self-efficacy.

H_2: Trustworthiness will have a significant effect on breastfeeding self-efficacy.

H_3: Goodwill will have a significant effect on breastfeeding self-efficacy.

Beyond source credibility, the level of social support an individual perceives he/she receives from a source also influences the effect of information from a given source.

Social Support

Social support is defined by Cobb (1976) as information that leads an individual to believe that they are "cared for and loved," are "esteemed and valued," or belong "to a network" (p. 300). Social support is documented as an important variable related to breastfeeding success, (e.g., Maleki-Saghooni et al., 2019). For example, a study conducted by Asiodu et al. (2016) found that first time African American mothers with greater social support were more motivated to initiate breastfeeding than women with less social support. This finding is important because there is a great disparity when comparing breastfeeding rates of black and white mothers (CDC, 2013). Further, one study indicated that women who receive adequate support from their networks have greater success at exclusively breastfeeding than those who do not receive adequate support (Laugen et al., 2016). Research also indicates a strong relationship between perceived social support received from hospital staff at the time of delivery and the likelihood to breastfeed (Kiełbratowska et al., 2018).

Social Support and Self-Efficacy

Previous research linking social support and self-efficacy has explored these variables related to a variety of outcomes. The relationship between social support and self-efficacy has been of particular interest to researchers interested in health-related outcomes. Specifically, within healthcare the relationship between social support and self-efficacy has been explored in communication of adults with speech impediments (Boyle et al., 2018), the use of social media by individuals with chronic conditions (Benetoli, Chen, & Aslani, 2019), and online curation systems such as Pinterest for the management of chronic pain (Guidry & Benotsch, 2019).

The relationship between social support and self-efficacy has also been highlighted within the context of breastfeeding. A cross-sectional study of 220 women indicated a significant relationship between social support and breastfeeding (Faridvand et al., 2017). A study conducted by Maleki-Saghooni et al. (2019) found that social support is significantly related to a woman's breastfeeding self-efficacy and asserted that receiving support and encouragement, while a woman is breastfeeding is "necessary" (p. 4). Based on research that supports the relationship of social support and self-efficacy working together to produce a given outcome and the work by Maleki-Saghooni et al., the following hypothesis is made:

> H_4: Perceived social support will have a significant effect on breastfeeding self-efficacy.

Finally, no known research integrates the effects of source credibility and social support on the development of self-efficacy. While previous research primarily focuses on self-efficacy's effects on given outcomes, I am interested in the factors that might support and further develop self-efficacy. Therefore, I pose the following research question:

> RQ_3: Which source characteristic (i.e., expertise, trustworthiness, goodwill, or social support) of a woman's most frequently used source of breastfeeding information is the strongest predictor of breastfeeding self-efficacy?

Conclusion

This chapter reviewed the literature relevant to the context of this dissertation, specifically breastfeeding and information seeking. Factors including self-efficacy, source credibility, and social support were also reviewed. Based on the information presented above, I argue that the three dimensions of source credibility (i.e., expertise, trustworthiness, and goodwill) will have a positive impact on breastfeeding self-efficacy; I also argue that social

support will have a positive impact on breastfeeding self-efficacy. Furthermore, I pose research questions related to (1) the sources that women choose for breastfeeding information, (2) criteria for source selection, and (3) which factor (i.e., source credibility dimension or social support) has the greatest influence on breastfeeding self-efficacy. The following chapter outlines the methods used to test the hypotheses and answer the research questions put forth in this dissertation.

CHAPTER THREE. METHOD

The goals of this study were (1) to determine the sources women use most frequently when searching for breastfeeding information, (2) to explore the reasons women choose their most frequently used source, (3) to examine the relationship between source characteristics and a woman's breastfeeding self-efficacy, and (4) to determine which source characteristic (i.e., expertise, trustworthiness, goodwill, or social support) is the strongest predictor breastfeeding self-efficacy. In order to fulfill these goals, a mixed-methods approach was employed. This chapter outlines the research process and method used to accomplish the goals of this study.

Survey Design

The survey for this study consisted of five components: open-ended questions regarding the source participants use most frequently to find breastfeeding information, a Source Credibility Measure (McCroskey & Teven, 1999), a modified version of the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988), the Breastfeeding Self-Efficacy Scale Short Form (BSES-SF) (Dennis, 2003), and a demographic survey that provided contextual information about the data being collected. All materials used in this study were reviewed and approved by the university's Institutional Review Board prior to distribution to participants.

Participants accessed the survey through Qualtrics, an online survey response software. Each component of the survey was displayed on a separate page with a progress bar at the top of the page. Participants were not allowed to backtrack within the survey to reduce the likelihood that participants would go back to earlier questions and change answers to a more socially desirable answer as they progressed through the survey.

Open-Ended Questions

Participants were first prompted to think about the source they currently use most frequently when looking for information related to breastfeeding. They were then asked to answer three open-ended questions regarding this source. Questions in the open-ended question section included: "What is the source you currently use most frequently right now?", "What prompts you to use this source most often?", and "How many times per week do you currently use this source to find information related to breastfeeding?" These questions were used to identify the sources women use when searching for breastfeeding information, assess the criteria women use when choosing information sources related to breastfeeding, and estimate how frequently women use these sources.

Source Credibility

After answering the open-ended questions, participants completed McCroskey and Teven's (1999) Source Credibility Measure. The Source Credibility Measure is an 18-item scale that measures three dimensions of source credibility (i.e., expertise, trustworthiness, and goodwill) for a given source. Each question of the Source Credibility Measure is measured on a 7-point semantic differential scale, and scores for each dimension are used separately to estimate a source's credibility. Previous testing of this scale has displayed good internal reliability with Chronbach's alpha reliabilities typically falling between .80 and .94 (McCroskey & Teven, 1999). This scale has been widely used and accepted by researchers within the communication discipline as a valid instrument for measuring source characteristics related to credibility, namely expertise, trustworthiness, and goodwill (Rains, 2007; Westerman et al., 2014). A Cronbach's alpha was calculated for each of the three dimensions and the overall scale to determine the

reliability of the scale within the context of this study. Alpha levels for each of the dimensions were strong: Expertise (α = .92), Trustworthiness (α = .91), Goodwill (α = .93).

Social Support

Next, participants completed a modified version of the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988). The original scale consists of 12 questions, with three sub-scales that measure perceived social support received from a significant other, family, and friends. I combined the subscales into a single scale to measure the social support participants perceived they received from the source they listed as their most frequently used source because the study focuses on how social support from a single information source influences breastfeeding self-efficacy. Questions that were duplicated in the original sub-scales were removed resulting in a total of 10 questions for the modified scale. The original scale has been used by various researchers interested in social support (e.g., Stanley, Beck, & Zebb, 1998; Zimet et al., 1988; Zimet et al., 1990) and typically displays high reliability with alpha levels being reported between .84 (Zimet et al., 1990) and .94 (Stanley et al., 1998). The modified version of this scale reported high internal reliability (α = .94).

Breastfeeding Self-Efficacy

Participants were then asked to complete the short form of Dennis's (2003) breastfeeding self-efficacy scale. The BSES-SF is a 14-item scale that measures a mother's perceived ability to successfully complete specific breastfeeding tasks and her satisfaction with her breastfeeding relationship (e.g., "cope with breastfeeding like other challenging tasks," "determine that my baby is getting enough milk," "be satisfied with my breastfeeding experience," "keep wanting to breastfeed," etc.). Each item is measured on a 5-point Likert-type scale. Scores are added for a total range between 14 and 70 (Tuthill et al., 2016). This scale displayed high internal reliability

(with a Cronbach's alpha coefficient of 0.94) and strong construct validity in initial testing (Dennis, 2003). This scale has also been used successfully in additional research studies (e.g., Dennis, 2006; McCarter-Spaulding & Gore, 2009). While several instruments exist that measure constructs related to breastfeeding self-efficacy, I selected the BSES-SF because it is rooted in Bandura's theoretical framework (Dennis & Faux, 1999), was rigorously tested during construction, and been found to have strong content validity (Tuthill et al., 2016). In this study, the scale displayed high reliability with an alpha coefficient of .89 reported.

Demographic Survey

Participants completed a demographic questionnaire at the end of the survey. Demographic information was collected to assess specific variables that may influence a woman's information behavior and breastfeeding self-efficacy, as suggested by previous literature and the pilot study data. Demographic variables collected included factors that influence information seeking (e.g., internet access and education level), and additional factors identified in previous research that may influence breastfeeding duration (e.g., age, age of child, race, marital status, and socioeconomic status). Additionally, the number of children and the current duration of the breastfeeding relationship were collected to conduct post hoc analysis of how these variables influence breastfeeding self-efficacy.

Recruitment and Sample

Women had to be currently breastfeeding and above the age of 18 in order to participate in the study. Because several questions of the BSES-SF assess information specifically related to nursing at the breast, women who exclusively pump were excluded from this study. However, because the BSES-SF is the most rigorously tested and reliable measurement available for breastfeeding self-efficacy, I still feel it is the best option for this initial look at the relationship

between source characteristics and breastfeeding self-efficacy. Participants were recruited via Facebook using convenience and snowball sampling. The recruitment notice and survey link were posted to my personal Facebook page and I requested that individuals (1) participate in the research if they qualify and are interested and (2) share the recruitment information. Recruitment information was also posted in various groups on Facebook that centered around a shared identity of motherhood with the permission of group administrators. I purposefully sampled Facebook groups based on characteristics I felt would increase the odds of women participating (e.g., groups I was previously affiliated with and groups with high membership) and groups with the potential to diversify my sample. Permission to recruit was granted by administrators of five groups: Academic Mamas, Fargo Moms Group, Simply Moms, Valley City Moms, and Working Catholic Moms. Women self-selected as potential participants by clicking on the survey link, which directed them to a welcome page with information about the study. Consent to participate was indicated by clicking to enter the survey.

A total of 358 responses were collected from breastfeeding women via the Qualtrics survey over a 21-day period (July 11, 2019 - August 1, 2019). All data were downloaded from Qualtrics into an Excel document. Surveys missing more than half of one scale were removed from the data set; 135 surveys were determined to be incomplete. One additional survey was removed from the data set because the participant did not meet inclusion criteria (i.e., participant disclosed in open-ended responses that she had ceased breastfeeding prior to participating in the study). After exclusions of incomplete data, a total of 222 complete responses remained for analysis.

Demographics

Women who participated in this study ranged in age from 19 to 44 years (M = 31.98; SD = 4.57). Participants reported having between 1 and 8 children (M = 2.13; SD = 1.18) with the child currently breastfeeding ranging from less than one month to 50 months old (M = 9.71; SD = 8.84). The participants of this study reported their intended breastfeed timelines as 3 months to 48 months (M = 17.66; SD = 8.39). The majority of this sample was white (n = 207; 92.00%), with African American or black (n = 2; <1%), Asian (n = 5; 2.22%), Hispanic (n = 2; <1%), and multiracial (n = 5; 2.22%) ethnicities also reported. Additionally, much of the sample reported being married or in a domestic partnership (n = 210; 93.33%) and well educated (i.e., obtaining a college degree or advanced degree; n = 205; 91.11%).

Data Analysis

Data were analyzed using qualitative methods (a-priori coding and thematic analysis via Excel) and quantitative methods (correlation and regression analyses via IMB SPSS). The following sections provide greater detail about the analysis processes used for this study.

Analysis of Open-Ended Data

Two open-ended questions were asked of participants. The first questions asked, “Think about the sources you currently use when you are looking for information related to breastfeeding. What is the source you use most frequently right now?” The second addressed the factors behind source selection, asking, “What prompts you to use this source most often?” Responses to both questions were analyzed using thematic analysis. Applied thematic analysis is an inductive analysis approach that is “designed to identify and examine themes from data in a way that is transparent and credible” (Guest, MacQueen, & Namey, 2012). The primary goal of thematic analysis is to provide an account of participants’ “stories and experiences… as

accurately and comprehensively as possible" (Guest et al., 2012). Because the goal of the open-ended data was to accurately depict women's breastfeeding-related information search behaviors, applied thematic analysis was an appropriate analysis approach for my open-ended data.

Question One

Data from the first open-ended question (i.e., "Think about the sources you currently use when you are looking for information related to breastfeeding. What is the source you use most frequently right now?") were analyzed using an a-priori coding scheme that was developed based on pilot data collected for this study. Coding in qualitative research is a way to condense data and make it more manageable for researchers to describe a phenomenon (Saldaña, 2015). A-priori coding is a form of coding that constrains analysis to predetermined categories.

I developed the a-priori codes used for this study using a two-cycle thematic analysis. Responses were first coded by source type with 24 unique sources suggested by participants. This information was further categorized by source characteristics. Each category was developed to highlight the source's level of expertise (i.e., expert versus nonexpert) and method of delivery (i.e., face-to-face, online, or printed media formats). This resulted in a total of six possible source-type classifications; each classification was then assigned a numeric code to assist in coding (i.e., 1 = expert face-to-face, 2 = expert online, 3 = expert print, 4 = non-expert face-to-face, 5 = non-expert online, 6 = non-expert print; see chapter two for a more detailed account of the development of the a-priori coding scheme). Qualitative survey responses were transferred from Qualtrics into an Excel document, and a numeric code was assigned to each answer based on the category that best described the answer provided. Totals for each category were then tallied to understand which sources women most frequently use when searching for information related to breastfeeding (RQ_1).

Question Two

Data from the second open-ended question (i.e., "What prompts you to use this source most often?") were analyzed using a two-cycle coding scheme as outlined by Saldaña (2015). I first read through the data to become familiar with the data set and consider emergent themes. Because most responses were short and concise, I decided to treat each response as one unit of data. After the initial read-through, first-cycle coding began.

During first-cycle coding, codes that captured the essence of the response were applied to each participant's reply, a strategy called open coding. The constant comparison method (Gibbs, 2007) was employed throughout first-cycle coding to ensure consistency of coding. To further improve consistency a codebook was developed during first-cycle coding (Guest et al., 2012). The original codebook contained 32 codes, which were further categorized and refined during second-cycle coding.

In second-cycle coding, I first reviewed the existing codebook and identified codes that appeared analogous. For example, the code 'easy' (i.e., achieved without great effort) was subsumed under the code 'convenient' (i.e., involving little trouble or effort). Similarly, the code 'knowledgeable' (i.e., well informed) was condensed into the code 'expert' (i.e, having a comprehensive and authoritative knowledge of or skill in a particular area). I then reviewed the data to ensure that codes were similar enough to be condensed into a single code. This process yielded a total of 23 independent codes. Then, reviewing the remaining codes I noticed that codes could be cataloged neatly into five categories. These categories include information characteristics, source characteristics, individual needs, and source affordances (i.e., qualities related to the potential use of a source; adapted from Sundar, 2009). Codes were then sorted into these categories and tallied to assist in identifying salient themes in the data. The process of

refining and categorizing codes in second-cycle coding provided greater insight into the criteria women use to select their most frequently used source for seeking information about breastfeeding (RQ_2).

Analysis of Scales

Composite Scores

Composite scores were computed for each scale using the method suggested by the developers of each instrument. The source credibility scale (McCroskey & Teven, 1999) combines items by dimension (i.e., by calculating the sum), resulting in a separate score for each dimension of credibility with scores for each dimension ranging between 6 and 42. To compute the composite score of the MSPSS (Zimet et al., 1988), the mean is calculated for all items of the scale resulting in one composite score for each participant. Composite scores for the modified version of the MSPSS used for this study ranged between 10 and 70. Responses for all items of the BSES-SF scale are added together to determine the composite score of that scale (Dennis, 2003), resulting in an overall score ranging between 14 and 70.

Converting Data to Z-scores

The scales used for this study differed in measurement (e.g., source credibility and MSPSS measured on a 7-point scale and BSES-SF measured on a 5-point scale); therefore, after the composite scores were computed, I converted them into z-scores. Z-scores are a way to standardize data by transforming values. After conversion to z-scores, the data set becomes uniform with a mean of 0 and a standard deviation of 1 (Field, 2009). Z-scores were computed by running the descriptives function in SPSS on the composite scores for each of the variables for this study (i.e., expertise, trustworthiness, goodwill, social support, and breastfeeding self-efficacy). By checking “save standardized values as variables” in the descriptives function, z-

scores were computed by the software and saved as a new variable. The z-scores for each variable were then used for statistical analyses of the data.

Statistical Analyses

Pearson's correlation analysis was used to test for relationships between the independent variables (i.e., expertise, trustworthiness, goodwill, and social support) and the dependent variable (breastfeeding self-efficacy). The data collected to test the hypotheses in this dissertation are interval scale data—data that are measured by units of equal magnitude and do not have an absolute zero. Correlation is an analysis method that measures the linear relationship between two variables (McClave & Sincich, 2013); therefore, this analysis is appropriate for the type of data collected and the desired outcome (i.e., to test the relationship between source characteristics and breastfeeding self-efficacy). Pearson's correlation coefficient indicates the strength of the relationship between two variables (Field, 2009) and ranges from -1 to 1. A score of 0 indicates no relationship between the variables, a negative score indicates a negative relationship, and a positive score indicates a positive relationship. Results from the correlation analysis were used to test H_1 (Expertise will have a significant effect on breastfeeding self-efficacy), H_2 (Trustworthiness will have a significant effect on breastfeeding self-efficacy), H_3 (Goodwill will have a significant effect on breastfeeding self-efficacy), and H_4 (Perceived social support will have a significant effect on breastfeeding self-efficacy).

Multiple regression analysis, which tests for a linear relationship between more than one independent variables and one dependent variable (Mendenhall & Sincich, 2012), was used to answer RQ_3 (Which source characteristic [i.e., expertise, trustworthiness, goodwill, or social support] of a woman's most frequently used source of breastfeeding information is the strongest predictor of breastfeeding self-efficacy?). Multiple regression accounts for a combination of

independent variables in predicting the outcome of the dependent variable (Field, 2009). Given that the data used to answer RQ_3 is interval data and contains more than one independent variable being considered, multiple regression analysis was the appropriate analysis method to answer RQ_3. Expertise, trustworthiness, goodwill, and social support were input as the independent variables with breastfeeding self-efficacy as the dependent variable.

Conclusion

This chapter detailed the methods used to collect and analyze data for this study. Complete surveys were collected from 222 breastfeeding women, and data were analyzed using a combination of qualitative and quantitative analysis methods. Data collected from open-ended responses and scales were analyzed separately but were considered in light of each other when interpreting the results. When reflecting on the implications of findings for this study, I considered how responses from the open-ended data could be used to further explain findings from the survey measures. Additionally, I looked for areas where the data collected via scales could corroborate responses provided by participants in the open-ended questions. The next chapter of this dissertation reveals the results of these analyses.

CHAPTER FOUR. RESULTS

This study explored the relationship between sources women use to find information related to breastfeeding and their levels of breastfeeding self-efficacy. Participants completed a survey comprising of open-ended questions and scales measuring source credibility, perceived social support, and breastfeeding self-efficacy. Qualitative and quantitative methods were then used to analyze the data and provide insight into the research questions and test the hypotheses of this study. This chapter presents the findings of this study.

Open-Ended Questions

Open-ended questions were analyzed using various qualitative approaches. An a-priori coding scheme was employed to analyze data from the first open-ended question (What is the source you use most frequently to find information related to breastfeeding?). Responses to the second open-ended question (What prompts you to use this source most often?) were analyzed using a two-cycle coding method (Saldaña, 2015). Findings from these analyses are reviewed below.

Research Question 1

The first research question of this study asks, "Which sources do women most frequently use when searching for information related to breastfeeding?" To answer this research question, I coded the data using an a priori coding scheme. Data were then sorted into one of six categories to indicate the source's level of expertise (i.e., expert versus nonexpert) and method of delivery (i.e., face-to-face, online, or print). Possible classifications of sources for this study include expert face-to-face, expert online, expert print, non-expert face-to-face, non-expert online, and non-expert print.

Online Sources

Women who participated in this study were most likely to consult online sources (180 responses) when searching for information related to breastfeeding. Nonexpert online sources (112 responses) were used most frequently. Participants noted several nonexpert online sources they consulted most frequently including breastfeeding support groups on Facebook, Instagram accounts that support breastfeeding, Google searches, and mobile applications with group discussion forums (e.g., Baby Center). Expert online sources were also popular among women who participated in this study (68 responses). Participants cited websites such as KellyMom.com, La Leche League, and Facebook groups moderated by certified lactation consultants as frequently used expert online sources used to seek information about breastfeeding.

Face-to-Face Sources

Face-to-face sources were the next most common sources of information used to find information related to breastfeeding. Expert face-to-face sources were used most frequently (29 responses) over nonexpert face-to-face sources (20 responses). Examples provided of expert face-to-face sources include in-person breastfeeding support groups (e.g., La Leche League and hospital-sponsored breastfeeding support groups) and lactation consultants. Nonexpert face-to-face sources reported by participants included friends, family members, and other breastfeeding mothers.

Print Sources

A small number (5 responses) of women indicated that they most frequently sought information through print media sources. These women noted that they sought information about breastfeeding in books—specifically *The Womanly Art of Breastfeeding* (La Leche League)—

and hospital-provided literature when searching for information related to breastfeeding. No nonexpert print sources were present in the data.

Research Question 2

The second research question in this study asks, "What criteria do women use when selecting their most frequently used source for finding information related to breastfeeding?" Data to answer this question were collected in open-ended question two (What prompts you to use this source most frequently to access breastfeeding information?), and I employed a two-cycle qualitative coding scheme to illuminate the themes present in the data. Participant responses were categorized into five major categories: source affordances (i.e., qualities related to the potential use of a source) (160 responses), information characteristics (92 responses), source characteristics (88 responses), individual needs (19 responses), and heuristics (19 responses). A noticeable break was present between source characteristics and individual needs; therefore, the most salient selection criteria include source affordances, information characteristics, and source characteristics.

Source Affordances

Affordances of a source were the most commonly cited criteria for women when selecting a source to find breastfeeding information. An affordance is defined as the qualities related to the potential use of a source (Sundar, 2009). One example of a source affordance is the ability to 'swipe' on a page rather than click a button. Affordances reported by women in this study were convenience and quick access. That is, women were most likely to choose a source that was convenient and provided information quickly.

Convenient. In this study, convenient was defined as "involving little trouble or effort" (Lexico, n.d.). Convenient was often an In Vivo code or a code taken from the participant's own

language (Saldaña, 2015). This code was used most frequently when women mentioned that a source was chosen (1) out of convenience, (2) because it was a website or platform they were already frequently using (e.g., Facebook), (3) that the source was easy to use, and that (4) the source was easily accessible. Responses that exemplify this code include: "it's easily accessible (I'm already on Facebook all the time anyway) …," "…available 24/7 at my fingertips," and "convenient at any time of the day."

Being able to look up information on a mobile platform was especially appealing to participants. Using the time while nursing to do something proactive such as search for breastfeeding information was noted by several participants. One woman shared that she most frequently chose the website Kellymom.com because it was "easy to look it up on the phone while breastfeeding," and another noted that "being hooked up to the pump it limits what [she] can do, so [she is] typically on her phone." All but five of the responses coded as convenient were tied to online sources (e.g., Facebook groups, Kellymom.com, Google searches, etc.). Women who described face-to-face sources as convenient described having easy access to lactation consultants or a nurse; these women noted that these sources were friends, accessible during visits to their physician, or close in proximity due to their job.

Quick. Being able to receive information quickly was salient within the source affordance category. Defined in the codebook as "receiving information in a short amount of time," quick was applied to responses that described a desire to receive information promptly. Similar to convenience, quick was an In Vivo code. Responses coded as quick almost always said that the source offered "quick" information; however, words such as "fast" and "immediacy" were also clues that 'quick' was the correct code to describe the data.

Quick was a code largely connected with online sources—only three responses coded 'quick' were face-to-face sources—and was also frequently used in conjunction with convenience. One participant who cited a breastfeeding app as her most frequently used source indicated that she chose this source because it offered information that was quick and easy to access. Another mother indicated that Google, her most frequently used information source, was selected because it is "easy and quick to type what [she is] looking for." This sentiment was echoed throughout the data set with mothers noting that obtaining information related to breastfeeding primarily online is quick and convenient.

Information Characteristics

Characteristics of the information provided by a source served as an important criterion for women when choosing a source to find breastfeeding-related information. Any code pertaining to a feature or quality of the content being conveyed by a source was categorized as an information characteristic. Women were most likely to choose a source that offered varied information that was perceived to be of high quality; one of the markers women saw useful for the evaluation of information quality is the existence of evidence- or research-based content.

Variety. Women who participated in this study were drawn to sources that offered diverse information in a single place. This code was applied to responses that indicated that the ability to access multiple viewpoints on a single issue was one reason they chose their most frequently used source. An example that best captures the theme of variety is a mother who noted that she uses Internet searches because it offers a "vast amount of results that allow [her] the option to sift through search results." The concept of receiving varied information was an attractive information characteristic for several women with participants sharing that their most frequently used source offers "many different opinions and points of view from women...,"

"several articles/mom blogs/quick reads all in one place," and "loads of information." Some who shared their preference for a variety of information indicated that this allowed them to evaluate the quality of information being provided.

Quality. Some women were concerned that the information they were receiving was of high caliber. Responses coded as quality typically contained words such as 'reliable', 'quality', or 'accurate.' Many of the responses coded this way were very brief; however, those that provided greater context often cited their belief that information was of high quality was based on it being evidence- or research-based.

Evidence-based/research-based. The code evidence- or research-based was used when participants noted that the information they sought most frequently was backed by evidence of some sort. One participant reported that she typically accessed Kellymom.com because it "has tons of information that are backed by scientific research." Other participants responded that they accessed sources they felt were "research-based," "cite academic sources on all their articles," or contains "real, modern research and facts." One participant shared that, "as a healthcare professional [she] need[s] evidence-based data to inform [her] practice." She went on to share that preparing to offer support to lactating women at the same time that she is currently breastfeeding was beneficial.

Source Characteristics

The final salient characteristics women considered when selecting a source to receive breastfeeding information most frequently were related to the source. Codes related to the origin of the information were categorized as source characteristics. The most commonly mentioned source characteristic that women were concerned with was the level of knowledge and authority a source had over a specific issue.

Expert. For this study, the code expert was defined as a source that has "comprehensive and authoritative knowledge of or skill in a particular area" (Lexico, n.d.). Responses coded as expert most often indicated that they most frequently used a source who offered information was (1) a professional trained in lactation (e.g., lactation consultant or midwife) or (2) "knowledgeable, "well-informed," or similar descriptor of qualification.

Lactation consultants were most frequently called out as specific expert sources whether used as a face-to-face or online source. One participant shared that she trusted a specific Facebook group because she knows there is "a knowledgeable IBCLC [International Board Certified Lactation Consultant]" in the group. Another frequent Facebook group (The Cleavage Club) noted that she knows the page is "ran by very knowledgeable lactation consultants and they pre-approve every post," which is one reason she uses this source most frequently. While IBCLCs are trained experts in breastfeeding-related information, maternal experience was also highly regarded as expert knowledge by women who participated in this study.

Experiential knowledge. Experiential knowledge is defined as "information and/or skills obtained through a personal practice of breastfeeding" for this study. Several participants noted that the availability of experiential knowledge from other mothers was highly valued when selecting a source to receive information related to breastfeeding. One participant shared that this experiential knowledge is primary for her most used source (i.e., friends) and that trained expertise is secondary. Specifically, this participant shared that she relies "on other new moms or moms of young children because their experiences are so similar to [hers]. When [they] can't figure it out together, [they] have a lactation consultant from the hospital where [they] delivered who [they] consult."

Several women noted that learning through other mothers' experiential knowledge helped them feel a sense of solidarity as well. For example, one mother shared that she enjoys "talking about others' experience and knowing you're not in it alone." Similarly, another participant shared that "other moms going through similar experiences... help [her] understand or find a solution."

Scales

A series of Pearson's correlation tests were run to compare the effect that source characteristics (i.e., expertise, trustworthiness, goodwill, and social support) have on a woman's breastfeeding self-efficacy. Composite scores (i.e., independent variable) for each of the source characteristics were tested individually against the composite score for breastfeeding self-efficacy (i.e., dependent variable). Multiple regression was used to answer research question three. For the multiple regression test, all four source characteristics were set as independent variables and breastfeeding self-efficacy was set as the response variable. Significance for all statistical testing in this study was set at $p < .05$.

Hypothesis 1

The first hypothesis for this study suggested that expertise would have a significant effect on breastfeeding self-efficacy. I ran a Pearson's correlation test to assess the relationship between expertise (i.e., independent variable) and breastfeeding self-efficacy (i.e., dependent variable). Participants' ratings of source expertise were significantly associated with their ratings of breastfeeding self-efficacy; $r = .19$, $p = .005$. These findings are consistent with Hypothesis 1.

Hypothesis 2

The second hypothesis for this study proposed that trustworthiness would have a significant effect on breastfeeding self-efficacy. A Pearson's correlation test was run to test the

relationship between trustworthiness (i.e., independent variable) and breastfeeding self-efficacy (i.e., dependent variable). The trustworthiness of a source was significantly related to participants' breastfeeding self-efficacy; $r = .16$, $p = .02$. Therefore, Hypothesis 2 was supported.

Hypothesis 3

The third hypothesis in this study suggested that goodwill would have a significant effect on breastfeeding self-efficacy. A Pearson's correlation test was run to test the relationship between goodwill (i.e., independent variable) and breastfeeding self-efficacy (i.e., dependent variable). There was a significant relationship between source goodwill and participants' breastfeeding self-efficacy; $r = .14$, $p = .04$. These findings support Hypothesis 3.

Hypothesis 4

The fourth hypothesis of this study posits that perceived social support would have a significant effect on breastfeeding self-efficacy. A Pearson's correlation test was run to test the relationship between social support (i.e., independent variable) and breastfeeding self-efficacy (i.e., dependent variable). Consistent with Hypothesis 4, perceived social support was significantly associated with participants' breastfeeding self-efficacy; $r = .15$, $p = .028$. Therefore, Hypothesis 3 is supported.

Research Question 3

The third research question in this study asked, "Which source characteristic (i.e., expertise, trustworthiness, goodwill, or social support) of a woman's most frequently used source of breastfeeding information is the strongest predictor of breastfeeding self-efficacy?" To answer this research question, a multiple linear regression was run with expertise, trustworthiness, goodwill, and social support input as independent variables; breastfeeding self-efficacy was input as the response variable. Taken together, expertise, trustworthiness, goodwill, and expertise

account for a significant portion of the variance in breastfeeding self-efficacy, F (4, 217) = 2.67, Adjusted R^2 = .03, p = .033. Results from regression analysis indicate that out of the source characteristics measured in this study, source expertise is the strongest predictor of breastfeeding self-efficacy; however, no source characteristic is a unique significant predictor of breastfeeding self-efficacy (expertise β = .21, p = .073, trustworthiness β = -.05, p = .768, goodwill β = -.03, p = .845, and social support β = *.13*, p = .107).

Conclusion

This chapter outlined the findings of this study. Women in this study most frequently used non-expert online information sources when searching for information related to breastfeeding. These sources were typically selected based on source affordances, information characteristics, and source characteristics. Hypotheses for this study posited a significant relationship between source characteristics (i.e., expertise, trustworthiness, goodwill, and social support) and breastfeeding self-efficacy; all hypotheses were supported. Out of the source characteristics measured in this study, source expertise was found to be the strongest predictor of breastfeeding self-efficacy; however, it is not an individual significant predictor when modeled alongside the remaining source characteristics. A discussion on these findings is provided in chapter five.

CHAPTER FIVE. DISCUSSION

While breastfeeding initiation rates are relatively high (81.10%), just 22.30% of mothers exclusively breastfeed by the time an infant reaches six months of age (CDC, 2016). Bearing in mind the substantial decrease in breastfeeding rates over the first six months after initiation, this dissertation explored how factors related to information seeking influence breastfeeding rates. More specifically, the goals of this dissertation are: (1) to discover where women go when seeking information related to breastfeeding (2) to understand the reasons they choose their most frequently used source, (3) to examine the relationship between source characteristics and a woman's breastfeeding self-efficacy, and (4) to determine which source characteristic (i.e., expertise, trustworthiness, goodwill, or social support) is the strongest predictor of a woman's breastfeeding self-efficacy. I focused on breastfeeding self-efficacy because it is a well-established predictor of breastfeeding duration.

In this chapter, I discuss the findings of this study. Specifically, the prevalence of online information seeking, source selection criteria, and the impact of source characteristics on breastfeeding self-efficacy. I end by identifying contributions of the study, considering the limitations of its findings, and suggesting directions for future research.

Prevalence of Online Information Sources

Research Question 1 asked, "Which sources do women most frequently use when searching for information related to breastfeeding?" Participants in this study reported that their most frequently used source was typically an online source. Non-expert online sources were reported most frequently by participants. These responses reaffirm literature related to maternal and health-related information seeking (e.g., Fox & Duggan, 2013; Herbert et al., 2016; Jacobs et al., 2017). Traditionally, information about motherhood was provided through interpersonal

channels and vicarious experiences with motherhood (Jang et al., 2015), but contemporary maternal information-seeking practices have shifted in recent years. Increased mobility along with the accessibility of information through new media channels has changed the way that women seek information about motherhood (Heisler & Butler Ellis, 2008). It is possible that participants' tendency to use online information sources was amplified by the sampling strategy used in this study (sampling from women who are Facebook users). These women are likely already active in online communities; therefore, it makes sense that they might also seek information from these communities (i.e., non-expert online sources) out of convenience. Still, literature related to contemporary maternal information seeking suggests that women frequently turn to online sources–including online discussion forums or social media platforms–to find information about motherhood (Johnson, 2015; Madge & O'Connor, 2006); findings of this study are consistent with contemporary research on maternal information seeking.

Selection Criteria

Research Question 2 asked, "What criteria do women use when selecting their most frequently used source for finding information related to breastfeeding?" Three categories of selection criteria were consistently cited by participants: (1) source affordances, (2) information characteristics, and (3) source characteristics.

Source Affordances

Participants most frequently noted that they use social networking sites they were already using (e.g., Facebook) to find information because it is quick and convenient. The fact that this characteristic was mentioned more than other selection criteria (119 responses) indicates that it is of primary importance to women who are seeking information related to breastfeeding. Facebook use tends to increase in new mothers as a way to build social capital (Bartholomew et al., 2012).

Because recruitment for this study took place primarily on Facebook, it is likely that women who participated in this study visit the site frequently. Therefore, it makes sense that women would feel at ease finding information about breastfeeding on social media platforms, especially during the early stages of motherhood.

Online sources offer the ability to gain access to health-related information in a way that is convenient, private, and cost-effective (Quinn et al., 2017)—qualities that are especially attractive to women who are breastfeeding. Participants consistently indicated that searches for breastfeeding-related information often happened while they were nursing, a time when mobility is greatly reduced. The revelation that women are frequently searching for information while nursing adds to our understanding of information-seeking behaviors of nursing mothers. A factor that has not been considered in previous research related to maternal information-seeking behaviors is the times when information need is greatest. It is plausible to assume that information need is heightened during nursing sessions because questions and concerns are brought to top-of-mind during these times. Searches while nursing may also be taking place during times when more traditional forms of information (e.g., medical professionals or personal networks including family and friends) are not available—such as feeding sessions in the middle of the night. The finding that women privilege information that is convenient and easily accessible highlights the need for having credible information sources available in a format that is easily accessible for use during times when information is intensified and women are not able to access traditional information sources.

Information Characteristics

Women in this study also emphasized their consideration of information quality and variety when choosing a source. Quality of information was often cited as criteria women

consider when selecting a source for breastfeeding-related information. This finding echoes the conclusions drawn by Kostagiolas et al. (2013) who noted that parents desire information that is high-quality when making health-related decisions for their children. The selection criterion of quality information is not particularly surprising in itself, but when taken into consideration of women's desire for a variety of information from a single source adds an interesting dimension for consideration in research related to information seeking.

Participant's responses related to information variety may indicate that women want more information to sift through in order to make more informed decisions about breastfeeding. Being able to access an assortment of information and opinions from a single source is well aligned with the affinity for convenience in information seeking. Being able to access a variety of information from a single source allows women to sift through content and make judgments about the validity and usefulness of the information without having to seek out additional sources. Thus, women may feel they are better able to make more educated decisions when they are able to weigh several pieces of information from a single source.

Additionally. the frequent use of sources that provide a wide variety of information may be related to a woman's desire for autonomy in health-related decisions. A study conducted by Cullati et al. (2011) indicated that patients favor shared decision making in health-related situations and that younger women with higher levels of education had an increased desire for autonomy in these decisions. Additionally, Madge and O'Connor (2006) suggested that women who seek information online feel more empowered because of the access they gain to alternative sources. The freedom of being able to seek a variety of information may also make women feel more secure about their breastfeeding practices. Kostagiolas et al. (2013) indicated that parents who sought information beyond that given by a medical provider did so to reduce anxiety about

their child's condition. Similarly, breastfeeding women may participate in online information seeking to reduce anxiety related to breastfeeding (e.g., milk production, infant growth rates, and medical concerns such as clogged ducts or mastitis). Ultimately, being offered a variety of information allows women to make decisions about practices that appear to be both effective and realistic, which may have a positive effect on their breastfeeding self-efficacy.

Source Characteristics

Source characteristics were mentioned consistently throughout the data as criteria of interest when selecting a source about information related to breastfeeding. These criteria were mentioned less frequently throughout the data than source affordances and information characteristics, which indicates it may play a smaller role in the selection of breastfeeding information sources. Women who indicated that a characteristic related to the source was a factor that drove source selection were primarily concerned with the source's expertise about breastfeeding. Expertise was the only source characteristic targeted by the hypotheses that was salient throughout the data collected from the open-ended questions, which would suggest that it is the primary source characteristic women are consciously considering when making a decision about sources to consult for breastfeeding information. Data collected for Research Question 3 (i.e., "Which source characteristic [i.e., expertise, trustworthiness, goodwill, or social support] of a woman's most frequently used source of breastfeeding information is the strongest predictor of breastfeeding self-efficacy?") aligns with this finding. Multiple regression analysis of this data revealed that source expertise was the strongest predictor of breastfeeding self-efficacy out of the source characteristics considered in this study. At the very least, we can be confident that women who are concerned with source characteristics are considering source expertise when they are seeking breastfeeding-related information, and that this selection criterion is providing some

predictive value for their breastfeeding self-efficacy (i.e., the more expert a woman believes her information sources are, the more likely she will have higher breastfeeding self-efficacy).

Source Characteristics in Relation to Breastfeeding Self-Efficacy

Based on previous research, I hypothesized that breastfeeding self-efficacy would be influenced by four sources characteristics—expertise, trustworthiness, goodwill, and perceived social support. Results from correlation analysis revealed that all four variables were positively related to breastfeeding self-efficacy and all hypotheses in this study were supported. These findings should be interpreted with the following caveats in mind. Survey data collected for this study cannot determine time order related to breastfeeding self-efficacy and perceptions of information sources, so I am unable to draw conclusions of causation. Additionally, the association between individual source characteristics and breastfeeding self-efficacy were rather weak (i.e., expertise $r = .19$, trustworthiness $r = .16$, goodwill $r = .14$, and social support $r = .15$), which indicates that the information sources a woman uses to access information about breastfeeding is somehow related to her breastfeeding self-efficacy, but likely plays fairly small role. Still, results suggest that the information women receive about breastfeeding may have an impact on their breastfeeding self-efficacy. Women who perceived their chosen source as possessing greater expertise, trustworthiness, goodwill, and social support were more likely to report higher levels of breastfeeding self-efficacy.

One interesting finding of this research is that even though all source characteristics measured are significantly and positively correlated with breastfeeding self-efficacy on their own, when combined in a multiple linear regression no single characteristic measured in this study is a significant independent predictor of breastfeeding self-efficacy. One plausible explanation for this finding is that the women in this study view all source credibility

characteristics in a level playing field, especially when their most frequently used source was an interactive online (non-expert or expert) source. This interpretation is supported by the results of the correlation analysis conducted for this study, which found that the independent variables used in this study (i.e., expertise, trustworthiness, goodwill, and social support) are highly correlated with each other (see Appendix C). This analysis indicates a strong linear relationship between each of the independent variables (i.e., multicollinearity) which will impact the results of multiple regression analysis (McClave & Sincich, 2012).

Women in this study reported frequent use of online discussion forums and groups on social media platforms as information sources. Members of these online communities are more likely to hold experiential knowledge of breastfeeding. Women who are experts by virtue of previous experience hold a practical wisdom of breastfeeding that can only be obtained through personal experience (i.e., expertise) and are not constrained by a governing body that makes recommendations about infant feeding practices—as a medical professional might be—and therefore can offer information without any professional biases (i.e., trustworthiness). Additionally, there is no obvious reason for mothers sharing their knowledge and experiences with others to do so in malice (i.e., goodwill) and the act of sharing increases social connection and solidarity with other mothers in the group (i.e., social support). This holistic view of source characteristics may explain why no single characteristic is a strong predictor when modeled alongside other source characteristic variables. To best account for variance between source characteristics and breastfeeding self-efficacy, future research should consider multiple source characteristics at the same time.

While selection criteria including source affordances and information characteristics were more prominent throughout the open-ended data, I do not believe this finding discounts the

importance of source characteristics in the development of breastfeeding self-efficacy. As researchers, we break factors down into constructs to study various phenomena. It is possible that participants in this study are looking at a more holistic picture of information where concepts of economics, mainly utility, come into play. Utility in economics is a concept that refers to how satisfied an individual is with a good or service they receive. Typically, this level of satisfaction is weighed against the cost to obtain said good or service (Berger, 1985). Within the context of this dissertation, women may be considering information utility. Mainly, is the cost (i.e., inconvenience, wait time, etc.) worth the potential increase in quality of information or will information of a lower quality satisfy their need with the benefit of greater convenience and less time consumed in obtaining the information. Women may be satisficing, a heuristic used in decision making that aims for adequate results using fewer resources than optimal results with greater expenditure (Warwick et al., 2009).

Choosing a source that is convenient over a source that can provide greater informational or social support may be especially problematic when women are faced with persistent breastfeeding. One such challenge is low milk supply, which is a commonly cited issue for women who cease breastfeeding early (Gatti, 2008). Many women who perceive their milk supply is low have sufficient supply to properly feed their infant. One concern about seeking information that is convenient rather than from a reliable source trained in lactation may lead women to incorrect assumptions about their milk supply. Additionally, women who have a low supply may require greater social support to persevere through the additional time and energy (e.g., a rigorous pumping schedule) needed to boost supply. Finally, more convenient sources may lead to information that may prove to be ineffective for increasing milk supply (e.g., changes in diet) or potentially harmful to the mother or infant such as suggesting the use of

domperidone (i.e, a drug used to treat nausea in Parkinson's patients). Therefore, satisficing may be problematic as a long-term information-seeking strategy.

Implications of Findings

Experiential Knowledge

Many participants indicated that expertise was not limited to formal training in lactation. While expertise from formal training (e.g., lactation consultants or midwives) was discussed throughout the data, experiential knowledge about breastfeeding (i.e., other women who have experience breastfeeding) was frequently cited as a form of expertise. McCroskey and Teven (1999) define expertise as a measure of the source's knowledge about a given topic. While we may think of expertise being a byproduct of formalized training, Aristotle's conceptualization of expertise, which he termed intelligence, views it as a form of practical wisdom obtained through experience (Griffin, Ledbetter, & Sparks, 2019). For many women who participated in this study, practical expertise was valued as much as or more than the expertise gained from formal training.

The concept of obtaining expertise through experience is further supported in the literature related to the transition to motherhood and maternal information seeking. Johnson (2015) argued that experiential knowledge and practical advice offered through online sources allowed women to negotiate, react to/against, and supplement knowledge provided by medical practitioners. Johnson suggests that online spaces allow for the reprioritization and privileging of knowledge through an authority of experience. Seeking sources that have experiential knowledge may also align with a desire for sources that can offer social support alongside informational support. Reaching out to mothers who have similar experiences not only provides information about how to handle a given challenge, but also a sense of solidarity and comfort for mothers who are struggling with breastfeeding challenges.

This reaffirmation of mothers' attraction to experiential knowledge holds implications for medical practitioners and others working within the health sector. For example, recognition of expertise gained through experience may be a threat to women receiving information that is medically accurate. Other areas of health-related information, such as proper vaccination protocols, have been greatly affected by individual epistemologies and the perception of expertise gained by experience (Carrion, 2018). Because the power of maternal experiential knowledge may be linked to cognitive heuristics such as similarity and liking, medical practitioners may benefit from building stronger rapport and using personalized examples when portraying medical information to their patients.

Online Source Preferences

The findings of this study are consistent with other contemporary research on maternal information-seeking behaviors; namely, that women may prefer to use online sources when seeking information about maternal-related issues. The tendency toward online sources has implications of particular interest for scholars of information literacy. One drawback of using the Internet as a primary source of information is that we have limited cognitive resources to evaluate information accurately (Lang, 2000; Metzger & Flanagin, 2013). The amount of information available online is virtually inexhaustible, and this abundance of information makes it impossible for individuals to review all existing information about a topic and make a knowledgeable decision about which information is the most accurate. In turn, selective exposure, or the tendency to favor information that aligns with one's views and avoid information that contradicts, increases in online spaces (Knobloch-Westerwick, Westerwick, & Johnson, 2015). Thus, women who consistently seek breastfeeding information online may be searching for information that aligns with what they are hoping to find rather than seeking out

quality information that may be more useful. With breastfeeding rates falling off prematurely, it may be that women are not properly equipped with information to assist them through the transition back to the workplace or maintain breastfeeding practices for the time period recommended by the AAP when separated from their child. Therefore, this research adds to our understanding of breastfeeding tenure by suggesting that proper information may provide women with resources that can help them persist through challenges faced during periods where breastfeeding rates tend to drop.

Furthermore, extensive use of the Internet for information seeking also makes it difficult to remember the sources where information comes from. Hovland and Weiss (1951) asserted that over time individuals are less likely to be able to correctly associate content with the correct source. The hyper-linked structures of the online environment compound difficulties in attributing information to the correct source (Metzger & Flanagin, 2013). This research is consistent with findings provided by Hovland and Weiss and Metzger and Flanagin. Several participants provided generic answers (e.g., "Google" or "the Internet") when asked which source they use most frequently to find information about breastfeeding. These answers are not sources per se, but resources used to find a source. While this lack of specificity could be an oversight on the part of the participant, it may signal that these women are unaware of the sources from which their information is coming.

These responses also draw attention to potential issues of women relying heavily on the convenience of Internet sources instead of evaluation of information or source characteristics—the latter being an important skill related to information literacy. In situations where misinformation could be detrimental to a woman's ability to continue breastfeeding (e.g., incorrect recommendations for pumping schedules) or dangerous to baby's health (e.g., use of

over the counter drugs while breastfeeding), the disassociation of the information from the source may lead to negative outcomes. Members of the medical community should consider how to best serve mothers who require access to credible information in a format that is convenient to access and easy to use. Forging partnerships between then medical community, communication researchers, and the technology industry may result in more reliable formats of information that women can access in ways that work within their lifestyle as mothers.

Contributions and Limitations

This study makes contributions to literature related to information seeking, breastfeeding- and maternal-related issues, and the development of breastfeeding self-efficacy. It highlights the importance of informational support for breastfeeding mothers and draws attention to the potential increase in breastfeeding self-efficacy related to the information a woman receives. Furthermore, women's preferences for convenience when seeking information advances the need for research and application of systems that can relay high-quality information to mothers in a way that fits into their lifestyle. Finally, the findings of this study indicate the need for a holistic approach to information-seeking research. Researchers must consider source affordances, information characteristics, and source characteristics as potential factors driving information-seeking behaviors of consumers. Nevertheless, the scope of this research is limited in some respects. Limitations related to this study's sample, measurement of perceptions, and the BSES-SF (Dennis, 2003) are addressed below.

The findings of this study may be limited by the relatively homogenous nature of the sample, which consisted largely of women who were white, well educated, and of higher socioeconomic status. These qualities have all been linked to longer breastfeeding tenure by prior research (Dennis, 2002; DiGirolamo et al., 2008). The findings of this study would likely change

in a population of women who are of a minority race, lacking education, or are of lower socioeconomic status. Previous research suggests that educational intervention may successfully increase individuals' feelings of empowerment regarding health decisions (Koerber et al., 2012) and prolong breastfeeding duration (Dodt et al., 2015). Therefore, I assume the effects of this research would be stronger if the demographic characteristics of the sample were shifted.

Additionally, women of a different demographic may rely even more heavily on online sources than the women who participated in this sample. Though demographics were likely similar between women who provided answers for the pilot data and women who participated in this study, information disparities appear prevalent even between these groups of women. When lacking educational and financial resources, women may be more likely to use online sources because of the convenience and cost-effectiveness noted in Quinn et al.'s research (2017). Certainly, access to information is something to consider moving forward in research concerned with maternal-related issues.

Finally, the instrument used to measure breastfeeding self-efficacy used in this study was not developed with extended breastfeeding or exclusive pumping in mind. Breastfeeding self-efficacy is typically used to predict breastfeeding tenure (Dennis, 2003). The AAP recommends breastfeeding to at least 12 months of age. In the United States, breastfeeding past infancy is typically considered extended breastfeeding (see Stearns, 2011); therefore, the BSES-SF may not be concerned with extended breastfeeding because at that point women would have met breastfeeding recommendations. However, women who breastfeed for an extended period or exclusively pump have a unique level of breastfeeding commitment as these practices are time-consuming and can be emotionally and socially taxing for the mother (Jardine, 2019; Keim et al., 2017; Stearns, 2011). Undoubtedly, these populations deserve a closer look because practices

such as extended breastfeeding and exclusive pumping pose unique challenges and a more complete understanding of these phenomena may hold insights that are helpful for mothers who are struggling to breastfeed.

Directions for Future Research

The next step in understanding the relationship between information seeking and breastfeeding self-efficacy is to continue refining the relationship between these variables. Foremost, researchers should consider more sophisticated statistical analysis and control for factors such as the age of a child and the number of children a woman has previously breastfed. These factors are likely to increase breastfeeding self-efficacy. A better understanding of when breastfeeding becomes second nature for women may help future researchers target populations of women who are at greatest risk for low breastfeeding self-efficacy.

The findings of this study indicate that the source characteristics of goodwill and social support merit a closer look by researchers. Goodwill in the context of breastfeeding may be perceived as goodwill toward the mother or goodwill toward the baby. Mothers may experience the baby-centered approach taken by many medical professionals as a lack of concern for their own emotional and physical challenges. Future research could examine this distinction in patient-provider communication regarding breastfeeding and other infant feeding practices.

While this study focused specifically on women's most frequently used source, the sources provided by women in this study may not be their preferred source of breastfeeding-related information. For example, women may prefer to ask their pediatrician or a lactation consultant for breastfeeding information, but a lack of access or time constraints may prevent them from doing so. There may be value in understanding the differences between a woman's

most frequently used source and the source she feels provides the most useful and accurate information.

The findings of this study draw attention to the process women are using when selecting information related to maternal health. Specifically, the fact that mothers often want information that is fast and convenient over information that is of high quality or coming from an expert source—evidence of satisficing (Metzger & Flanagin, 2013). This finding provides a point of consideration for communication scholars who consider the audience's attitude toward a source as a decisive factor in the reception of information. This finding does not downplay the importance of source characteristics examined further in this study (i.e., expertise, trustworthiness, goodwill, and social support), but instead points to the need for further research related to how the affordances of a source impact information-seeking practices.

Research related to extended breastfeeding and exclusive pumping is also in need of expansion. I feel that the lack of existing research on these topics created a blind spot for this study, and further research on exclusive pumping and extended breastfeeding would benefit numerous scholars interested in breastfeeding-related issues. Specific topics that merit a closer look include the role of social support for women who are breastfeeding outside of cultural norms and the availability and access to information related to exclusive pumping and extended breastfeeding. Addressing how information needs shift across the duration of a breastfeeding relationship aligns with Mercer's (2004) view on maternal identity construction. Mercer proposed the term *becoming a mother*, which advocates for a view that women are constantly developing in their role as a mother. This updated terminology stands in contrast to the previous term *maternal role attainment*, which implies that a process that ends after a woman enters motherhood and discourages longitudinal research.

Finally, future research should also strive to evaluate sources women use and make a more direct connection between the quality of a source and breastfeeding outcomes. This will advance our understanding of the impact of information on health-related outcomes. Questions that arise from this study include: Does better information make for better breastfeeding practices? Is it more important that a woman feels she is getting quality information or that the information she receives is realistic to implement in her lifestyle and habits?

Conclusion

This study explored the sources women use to find information about breastfeeding, the criteria women consider when selecting an information source, and how source characteristics impact breastfeeding self-efficacy. Findings revealed that women use non-expert online sources most frequently and selected sources based on source affordances, information characteristics, and source characteristics. Source characteristics including expertise, trustworthiness, goodwill, and social support were found to be positively correlated with breastfeeding self-efficacy. Expertise was found to be the strongest predictor of breastfeeding self-efficacy out of the source characteristics considered in this study, but it was not a significant independent predictor when modeled with the remaining source characteristics. Implications of this study stress the importance of access to quality information related to breastfeeding and continued research on the development of breastfeeding self-efficacy in various demographic populations and over the span of a breastfeeding relationship.

REFERENCES

Alberdi, G., O'Sullivan, E. J., Scully, H., Kelly, N., Kincaid, R., Murtagh, R., Murray, S., McGuinness, D., Clive, A., Brosnan, M., Sheehy, L., Dunn, E., & McAuliffe, F. M. (2018). A feasibility study of a multidimensional breastfeeding-support intervention in Ireland. *Midwifery, 58*, 86-92. https://doi.org/10.1016/j.midw.2017.12.018

Allers, K. S. (2017). *The big letdown: How medicine, big business, and feminism undermine breastfeeding.* St. Martin's Press.

American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics 129*(3), e827-e841. https://doi.org/10.1542/peds.2011-3552

Andres, E., Baird, S., Bingenheimer, J., & Markus, A. (2016). Maternity leave access and health: A systematic narrative review and conceptual framework development. *Maternal & Child Health Journal*, *20*(6), 1178–1192. https://doi.org/10.1007/s10995-015-1905-9

Asiodu, I. V., Waters, C. M., Dailey, D. E., & Lyndon, A. (2016). Infant feeding decision-making and the influences of social support persons among first-time African American mothers. *Maternal and Child Health Journal, 21*, 863-872. https://doi.org/10.1007/s10995-016-2167-x

Avery, M., Duckett, L., Dodgson, J., Savik, K., & Henly, S. J. (1998). Factors associated with very early weaning among primiparas intending to breastfeed. *Maternal and Child Health Journal, 2*(3), 167-179. https://doi.org/10.1023/a:1021879227044

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 34*(2), 191-215.

Bandura, A. (1986). *Social foundations of thought & action: A social cognitive theory*. Prentice-Hall, Inc.

Bartholomew, M. K., Schoppe-Sullivan, S. J., Glassman, M., Kamp Dush, C. M., & Sullivan, J. M. (2012). New parent's Facebook use at the transition to parenthood. *Family Relations, 61*, 455-469. https://doi.org/10.1111/j.1741-3729.2012.00708.x

Bartick, M., & Reinhold, A. (2010). The burden of suboptimal breastfeeding in the United States: A pediatric cost analysis. *Pediatrics*, *125*(5), e1048–e1056. https://doi.org/10.1542/peds.2009-1616

Benetoli, A., Chen, T. F., & Aslani, P. (2019). Consumer perceptions of using social media for health purposes: Benefits and drawbacks. *Health Informatics Journal*, 25(4), 1661–1674. http://doi.org/10.1177/1460458218796664

Benzies, K. M., Trute, B., & Worthington, C. (2013). Maternal self-efficacy and family adjustment in households with children with serious disability. *Journal of Family Studies, 19*(1), 35-43. https://doi.org/10.5172/jfs.2013.19.1.35

Berger, J. O. (1985). *Utility and Loss.* In: Statistical Decision Theory and Bayesian Analysis. Springer Series in Statistics (pp. 46-73). Springer.

Blyth, R., Creedy, D. K., Dennis, C-L., Moyle, W., Pratt, J., & De Vries, S. M., (2002). Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. *Birth 29*(4), 278-284.

Boyle, M. P., Beita-Ell, C., Milewski, K. M., & Fearon, A. N. (2018) Self-esteem, self-efficacy, and social support as predictors of communicative participation in adults who stutter. *Journal of Speech, Language, and Hearing Research, 61*, 1893-1906. http://doi.org/10.1044/2018_JSLHR-S-17-0443

Brembo, E. A., Kapstad, H., Van Dulmen, S., & Eide, H. (2017). Role of self-efficacy and social support in short-term recovery after total hip replacement: a prospective cohort

study. *Health & Quality of Life Outcomes*, *15*, 1–10. http://doi.org/10.1186/s12955-017-0649-1

Brown, A., & Lee, M. (2011). An exploration of attitudes and experiences of mothers in the United Kingdom who chose to breastfeed exclusively for 6 months postpartum. *Breastfeeding Medicine 6,* 197–204. https://doi.org/10.1089/bfm.2010.0097

Carrion, M. L. (2018). "You need to do your research": Vaccines, contestable science, and maternal epistemology. *Public Understanding of Science 27*(3), 310-324. https://doi.org/10.1177%2F0963662517728024

Centers for Disease Control and Prevention. (2013, February 8). Progress in increasing breastfeeding and reducing racial/ethnic differences—United States, 2000-2008 births. *Morbidity and Mortality Report, 62*(5), 77-80. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6205a1.htm

Centers for Disease Control and Prevention. (2016). *Breastfeeding report card.* Atlanta, GA: Division of Nutrition, Physical Activity, and Obesity. https://www.cdc.gov/breastfeeding/pdf/2016breastfeedingreportcard.pdf

Chezem, J., Friesen, C., & Boettcher, J. (2003). Breastfeeding knowledge, breastfeeding confidence, and infant feeding plans: Effects on actual feeding practices. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 32*(1), 40-47. https://doi.org/10.1177/0884217502239799

Chowdhury, R., Sinha, B., Sankar, M. J., Taneja, S., Bhandari, N., Rollins, N., Bahl, R., & Martines, J. (2015). Breastfeeding and maternal health outcomes: A systematic review and meta-analysis. *Acta Paediatrica, 104,* 96–113. https://doi.org/10.1111/apa.13102

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300-214.

Colen, C. G., & Ramey, D. M. (2014). Is breast truly best? Estimating the effects of breastfeeding on long-term child health and wellbeing in the United States using sibling comparisons. *Social Science & Medicine, 109*, 55-65. https://doi.org/10.1016/j.socscimed.2014.01.027

Cullati, S., Courvoisier, D. S., Charvet-Bérard, A. I., & Perneger, T. V. (2011). Desire for autonomy in health care decisions: a general population survey. *Patient Education and Counseling, 83*(1), 134-138. https://doi.org/10.1016/j.pec.2010.04.025

de Lauzon-Guillain, B., Thierry, X., Bois, C., Bournez, M., Davisse-Paturet, C., Dufourg, M-N., Kersuzan, C., Ksaiazek, E., Nicklaus, S., Vicaire, H., Wagner, S., Lioret, S., Charles, M. A. (2019). Associations between maternity or parental leave and breastfeeding duration: results from the ELFE cohort. *Maternal & Child Nutrition*, e12872. https://doi-org.ezproxy.lib.ndsu.nodak.edu/10.1111/mcn.12872

Dennis, C-L. (1999). Theoretical underpinnings of breastfeeding confidence: A self-efficacy framework. *Journal of Human Lactation, 15*(3), 195-201. https://doi.org/10.1177/089033449901500303

Dennis, C-L. (2002). Breastfeeding initiation and duration: A 1999-2000 literature review. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 31*(1), 12-32. https://doi.org/10.1111/ j.1552-6909.2002.tb00019.x

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. https://doi.org/10.1177/0884217503258459

Dennis, C-L. (2006). Identifying predictors of breastfeeding self-efficacy in the immediate postpartum period. *Research in Nursing & Health,* 29(4), 256-268. https://doi.org/10.1002/nur.20140

Dennis, C-L., & Faux, S., (1999). Development and psychometric testing of breastfeeding self-efficacy scale. *Research in Nursing and Health 22*, 399–409. https://doi.org/10.1002/(sici)1098-240x(199910)22:5%3c399::aid-nur6%3e3.0.co;2-4

Deutsch, F. M., Ruble, D. N., Fleming, A., Brooks-Gunn, J., & Stangor, C. (1988). Information-seeking and maternal self-definition during the transition to motherhood. *Journal of Personality and Social Psychology, 55*(3), 420–431. https://doi.org/10.1037/0022-3514.55.3.420

DiGirolamo, A. M., Grummer-Strawn, L. M., & Fein, S. B. (2008). Effect of maternity-care practices on breastfeeding. *Pediatrics 122*(s2), 543-549. https://doi.org/10.1542/peds.2008-1315e

Dobele, A., Fry, J., Rundle-Thiele, S., & Fry, T. (2017). Caring for baby: What sources of information do mothers trust? *Journal of Services Marketing,* 31(7), 677-689. https://doi.org/10.1108/jsm-02-2015-0104

Dodt, R. C. M., Joventino, E. S., Aquino, P. S., Almeida, P. C., & Ximenes, L. B. (2015). An experimental study of an educational intervention to promote maternal self-efficacy in breastfeeding. *Revista Latino-Americana de Enfermagem, 23*(4), 725-32. http://dx.doi.org/10.1590/0104-1169.0295.2609

Dunn, S., Davies, B., McCleary, L., Edwards, N., & Gaboury, I. (2006). The relationship between vulnerability factors and breastfeeding outcomes. *Journal of Obstetric,*

Gynecologic, & Neonatal Nursing, 35(1), 87-97. https://doi.org/10.1111/j.1552.6909.2006.00005.x

Faridvand, F., Mirghafourvand, M., Malakouti, J., & Mohammad-Alizadeh-Charandabi, S. (2017). Relationship between social support and breastfeeding self-efficacy among women in Tabriz, Iran. *British Journal of Midwifery*, *25*(2), 103–109. https://doi.org/10.12968/bjom.2017.25.2.103

Feenstra, M. M., Kirkeby, M. J., Thygesen, M., Danbjørg, D. B., & Kronborg, H. (2018). Early breastfeeding problems: A mixed method study of mothers' experiences. *Sexual & Reproductive Healthcare, 16*, 167-174. https://doi.org/10.1016/j.srhc.2018.04.003

Fein, S. B., Mandal, B., & Roe, B. E. (2008). Success of strategies for combining employment and breastfeeding. *Pediatrics 122*(s2), s56-s62. https://doi.org/10.1542/peds.2008-1315g

Field, A. (2009). *Discovering statistics using IBM SPSS statistics.* SAGE.

Foss, K. (2013). "That's not a beer bong, it's a breast pump!" Representations of breastfeeding in prime-time fictional television. *Health Communication, 28*(4), 329-340. https://doi.org/10.1080/ 10410236.2012.685692

Fox, S., & Duggan, M. (2013). *Health online 2013*. Pew Internet & American Life Project. https://www.pewinternet.org/wp-content/uploads/sites/9/media/Files/Reports/ PIP_HealthOnline.pdf

Gatti, L. (2008). Maternal perceptions of insufficient milk supply in breastfeeding. *Journal of Nursing Scholarship, 40*(4), 355-363. https://doi.org/10.1111/j.1547-5069.2008.00234.x

Gibbs, G. R. (2007). *Analyzing qualitative data*. London: SAGE Publications.

Gibson, L., & Hanson, V. L. (2013). 'Digital motherhood': How does technology support new mothers? *CHI.* https://doi.org/10.1145/2470654.2470700

Grassley, J. S., & Nelms, T. P. (2008). Understanding maternal breastfeeding confidence: A Gadamerian hermeneutic analysis of women's stories. *Health Care for Women International 29*(8-9), 841-862. https://doi.org/10.1080/07399330802269527

Griffin, E., Ledbetter, A., & Sparks, G. (2019). A first look at communication theory. McGraw Hill Education.

Grimes, H. A., Forster, D. A., & Newton, M. S. (2014). Source of information used by women during pregnancy to meet their information needs. *Midwifery, 30*, e26-e33. https://doi.org/10.1016/j.midw.2013.10.007

Guest, G., MacQueen, K. M., & Namey, E. E. (2012). *Applied thematic analysis.* Thousand Oaks, CA: SAGE.

Guidry, J. P. D., & Benotsch, E. G. (2019). Pinning to cope: Using Pinterest for chronic pain management. *Health Education & Behavior, 46*(4), 700–709. https://doi.org/10.1177/1090198118824399

Heisler, J. M., & Butler Ellis, J. (2008). Motherhood and the construction of "mommy identity": Messages about motherhood and face negotiation. *Communication Quarterly, 56*(4), 445-467. https://doi.org/10.1080/01463370802448246

Herbert, L. B., Makopoulos, C., & Lawhon, L. (2016). Social media health: What socially-active patients really want. *Health Union.* https://health-union.com/wp-content/uploads/2016/06/ Social-Media-for-Health.pdf

Hoddinott, P., Lee, A., & Pill, R. (2006). Effectiveness of a breastfeeding peer coaching intervention in rural Scotland. *Birth, 33*(1), 27-33. https://doi.org/10.1111/j.0730-7659.2006.00071.x

Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, *15*(4), 635-650.

Hussein, A. S., Manna, V., & Cohen, D. A. (2014). The impact of message framing and source credibility on breastfeeding intention: A social marketing approach. *Gadja Mada International Journal of Business, 16*(2), 93-109. https://doi.org/10.22146/gamaijb.5352

Ivarsson, B., Rådegran, G., Hesselstrand, R., & Kjellström, B. (2017). Information, social support and coping in patients with pulmonary arterial hypertension or chronic thromboembolic pulmonary hypertension—A nationwide population-based study. *Patient Education and Counseling*, *100*(5), 936–942. https://doi.org/10.1016/j.pec.2016.12.021

Jacobs, W., Amuta, A. O., & Jeon, K. C. (2017). Health information seeking in the digital age: An analysis of health information seeking behavior among US adults. *Cogent Social Sciences, 3*, 1-11. https://doi.org/10.1080/23311886.2017.1302785

Jang, J., Dworkin, J., & Hessel, H. (2015). Mothers' use of information and communication technologies for information seeking. *Cyberpsychology, Behavior, and Social Networking, 18*(4), 221-227. https://doi.org/10.1089/cyber.2014.0533

Jardine, F. M. (2019). Breastfeeding without nursing: "If only I'd known more about exclusively pumping before giving birth". *Journal of Human Lactation, 35*(2), 272-283. https://doi.org/10.1177%2F0890334418784562

Jerusalem, M., & Mittag, W. (1995). Self-efficacy in stressful life transitions. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 177–201). Cambridge University Press.

Johnson, S. A. (2015). 'Intimate mothering publics': Comparing face-to-face support groups and Internet use for women seeking information and advice in the transition to first-time

motherhood. *Culture, Health & Sexuality, 17*(2), 237-251. https://doi.org/10.1080/13691058.2014.968807

Kamali, S., Ahmadian, L., Khajouei, R., & Bahaadinbeigy, K. (2018). Health information needs of pregnant women: Information sources, motives and barriers. *Health Information & Libraries Journal*, *35*(1), 24-37. https://doi.org/10.1111/hir.12200

Kareklas, I., Muehling, D., & Weber, T. (2015). Reexamining health messages in the digital age: A fresh look at source credibility effects. *Journal of Advertising, 44*(2), 88-104. https://doi.org/10.1080/00913367.2015.1018461

Kaye, D. (1995). The importance of information. *Management Decision*, *33*(5), 5-12. https://doi.org/10.1108/EUM0000000003897

Keim, S. A., Boone, K. M., Oza-Frank, R., & Geraghty, S. R. (2017). Pumping milk without ever feeding at the breast in the Moms2Moms study. *Breastfeeding Medicine, 12*(7), 422-429. https://doi.org/10.1089/bfm.2017.0025

Kiełbratowska, B., Michaełek-Kwiecień, J., Kaźmierczak, M., & Bandurska, E. (2018). What promotes and hinders success in breastfeeding in hospital care?—The role of social support and anxiety. *Health Psychology Report, 6*(3), 252-260. https://doi.org/10.5114/hpr.2018.73051

Knobloch-Westerwick, S., Westerwick, A., & Johnson, B. K. (2015). Selective exposure in the communication technology context. In S. S. Sundar (Ed.) *The handbook of the psychology of communication technology* (407-424). John Wiley & Sons, Inc.

Koerber, A., Brice, L., & Tombs, E. (2012). Breastfeeding and problematic integration: Results of a focus-group study. *Health Communication, 27*(2), 124-144. https://doi.org/10.1080/10410236.2011.571754

Kong, S. K. F., & Lee, D. T. F. (2004). Factors influencing decision to breastfeed. *Journal of Advanced Nursing*, *46*(4), 369–379. https://doi.org/10.1111/j.1365-2648.2004.03003.x

Kostagiolas, P., Martzoukou, K., Georgantzi, G., & Niakas, D. (2013). Information seeking behaviour of parents of paediatric patients for clinical decision making: The central role of information literacy in a participatory setting. *Information Research, 18*(3), paper 590.

Lang, A. (2000). The limited capacity model of mediated message processing. *Journal of Communication, 50,* 46-70. https://doi.org/10.1111/j.1460-2466.2000.tb02833.x

Larsen, J. S., & Kronborg, H. (2013). When breastfeeding is unsuccessful - mothers' experiences after giving up breastfeeding. *Scandinavian Journal of Caring Sciences, 27*(4), 848–856. https://doi.org/10.1111/j.1471-6712.2012.01091.x

Laugen, C. M., Islam, N., & Janssen, P. A. (2016). Social support and exclusive breastfeeding among Canadian women. *Paediatric and Perinatal Epidemiology, 30*(5), 430-438. https://doi.org/10.1111/ppe.12303

Leurer, M. D., & Misskey, E. (2015). "Be positive as well as realistic": A qualitative description analysis of information gaps experienced by breastfeeding mothers. *International Breastfeeding Journal*, *10*(1), 1–11. https://doi.org/10.1186/s13006-015-0036-7

Lexico. (n.d.). Convenient. In *Lexico.com dictionary.* Convenient. (n.d.) https://www.lexico.com/en/definition/convenient

Lexico. (n.d.). Expert. In *Lexico.com dictionary.* Convenient. (n.d.) https://www.lexico.com/en/definition/expert

Li, R., Fein, S. B., Chen, J., & Grummer-Strawn, L. M. (2008). Why mothers stop breastfeeding: Mothers' self-reported reasons for stopping during the first year. *Pediatrics, 122*(S2), S69-S76. https://doi.org/ 10.1542/peds.2008-1315i

Liu, M., Yang, Y., & Sun, Y. (2019). Exploring Health Information Sharing Behavior Among Chinese Older Adults: A Social Support Perspective. *Health Communication*, *34*(14), 1824–1832. https://doi.org/10.1080/10410236.2018.1536950

Lutsiv, O., Pullenayegum, E., Foster, G., Vera, C., Giglia, L., Chapman, B., Fusch, C., & McDonald, S. (2013). Women's intentions to breastfeed: a population-based cohort study. *BJOG: An International Journal of Obstetrics & Gynaecology*, *120*(12), 1490–1499. https://doi.org/10.1111/1471-0528.12376

Madge, C., & O'Connor, H. (2006). Parenting gone wired: Empowerment of new mothers on the Internet? *Social & Cultural Geography, 7*, 199-220. https://doi.org/10.1080/14649360600600528

Maleki-Saghooni, N., Amel Barez, M., & Karimi, F. Z. (2019). Investigation of the relationship between social support and breastfeeding self-efficacy in primiparous breastfeeding mothers. *The Journal of Maternal-Fetal & Neonatal Medicine*, 1-6. https://doi.org/10.1080/14767058.2019.1568986

McCarter-Spaulding, D., & Gore, R. (2009). Breastfeeding self-efficacy in women of African descent. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 38*(2), 230-243. https://doi.org/10.1111/j.1552-6909.2009.01011.x

McClave, J., & Sinchich, T. (2013). *Statistics*. Boston, MA: Pearson.

McCroskey, J. C., & Teven, J. J. (1999). Goodwill: A reexamination of the construct and its measurement. *Communications Monographs*, *66*(1), 90-103. https://doi.org/10.1080/03637759909376464

McIntyre, L. M., Griffen, A. M., & BrintzenhofeSzoc, K. (2018). Breast is best . . . Except when it's not. *Journal of Human Lactation*, *34*(3), 575-580. https://doi.org/10.1177/0890334418774011

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

Mendenhall, W., & Sincich, T. T. (2012). A second course in statistics: Regression analysis. Pearson.

Mercer, R. T. (2004). Becoming a mother versus maternal role attainment. *Journal of Nursing Scholarship, 36*(3), 226–232. https://doi.org/10. 1111/j.1547-5069.2004.04042.x

Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics, 59*, 210-220. https://doi.org/10.1016/j.pragma.2013.07.012

Minas, A. G., & Ganga-Limando, M. (2016). Social-cognitive predictors of exclusive breastfeeding among primiparous mothers in Addis Abada, Ethiopia. *PLOS One, 11*(10), 1-12. https://doi.org/10.1371/journal.pone.0164128

Myers, S. A. (2004). The relationship between perceived instructor credibility and college student in-class and out-of-class communication. *Communication Reports*, *17*(2), 129–137. https://doi.org/10.1080/08934210409389382

Nichols, J., Schutte, N., Brown, R. F., Dennis, C-L., & Price, I. (2009). The impact of self-efficacy intervention on short-term breastfeeding outcomes. *Health Education & Behavior, 36*(2), 250-259. https://doi.org/10.1177/1090198107303362

Nigah, Z., Ajmal, A., & Abid, S. (2019). Resilience, perceived social support and psychological stress in diagnosis of cancer. *Isra Medical Journal, 11*(1), 36–40.

Odom, E. C., Li, R., Scanlon, S., Perrine, C. G., & Grummer-Strawn, L. (2013). Reasons for earlier than desired cessation of breastfeeding. *Pediatrics 131*(3), e726-e732. https://doi.org/10.1542/peds.2012-1295

Ogunmodede, T. A., Ebijuwa, A. S., & Oyetola, S. O. (2013). Health information need and information sources of pregnant women in Ogbomoso Metropolis, Oyo State, Nigeria. Library Philosophy and Practice, 1.

Pan, K-C., Hung, S-Y., Chen, C-I., Lu, C-Y., Shih, M-L., Huang, C-Y., (2019). Social support as a mediator between sleep disturbances, depressive symptoms, and health-related quality of life in patients undergoing hemodialysis. *PLoS ONE, 14*(4), 1-14. https://doi.org/10.1371/journal.pone.0216045

Park, J., Tolea, M. I., Arcay, V., Lopes, Y., & Galvin, J. E. (2019). Self-efficacy and social support for psychological well-being of family caregivers of care recipients with dementia with Lewy bodies, Parkinson's disease dementia, or Alzheimer's disease. *Social Work in Mental Health*, *17*(3), 253–278. https://doi.org/10.1080/15332985.2018.1526756

Paul, F., Hendry, C., & Cabrelli, L. (2004). Meeting patient and relatives' information needs upon transfer from an intensive care unit: The development and evaluation of an information booklet. *Journal of Clinical Nursing*, *13*(3), 396–405. https://doi.org/10.1046/j.1365-2702.2003.00876.x

Phua, J. (2016). The effects of similarity, parasocial identification, and source credibility in obesity public service announcements on diet and exercise self-efficacy. *Journal of Health Psychology, 21*(5), 699-708. https://doi.org/10.1177/1359105314536452

Pope, C. J., & Mazmanian, D. (2016). Breastfeeding and postpartum depression: An overview and methodological recommendations for future research. *Depression Research and Treatment*, *26*, 1-9. https://doi.org/10.1155/2016/4765310

Quinn, S., Bond, R., & Nugent, C. (2017). Quantifying health literacy and eHealth literacy using existing instruments and browser-based software for tracking online health information seeking behavior. *Computers in Human Behavior, 69*, 256-267. https://doi.org/10.1016/j.chb.2016.12.032

Rains, S. A. (2007). The impact of anonymity on perceptions of source credibility and influence in computer-mediated group communication: A test of two competing hypotheses. *Communication Research*, *34*(1), 100-125. https://doi.org/10.1177/0093650206296084

Rosin, H. (2009). The case against breast-feeding. *The Atlantic.* theatlantic.com/magazine/archive/2009/04/the-case-against-breast-feeding/307311/

Rosman, T., Peter, J., Mayer, A. K., & Krampen, G. (2018). Conceptions of scientific knowledge influence learning of academic skills: Epistemic beliefs and the efficacy of information literacy instruction. *Studies in Higher Education*, *43*(1), 96–113. https://doi.org/10.1080/03075079.2016.1156666

Saldaña, J. (2015). *The coding manual for qualitative researchers.* SAGE.

Sikorski, J., Renfrew, M. J., Pindoria, S., & Wade, A. (2002). Support for breastfeeding mothers. *The Cochrane Database of Systematic Reviews,* 1-8. https://doi.org/10.1002/14651858.CD001141

Simpson, J., Haines, K., Lekwuwa, G., Wardle, J., & Crawford, T. (2006). Social support and psychological outcome in people with Parkinson's disease: Evidence for a specific pattern of associations. *British Journal of Clinical Psychology*, *45*(4), 585–590. https://doi.org/10.1348/014466506X96490

Smith, L. J. (2007). Impact of birthing practices on the breastfeeding dyad. *Journal of Midwifery & Women's Health*, *52*(6), 621–630. https://doi.org/10.1016/j.jmwh.2007.07.019

Song, H., Cramer, E. M., McRoy, S., & May, A. (2013). Information needs, seeking behaviors, and support among low-income expectant women. *Women & Health*, *53*(8), 824-842. https://doi.org/10.1080/03630242.2013.831019

Stanley, M. A., Beck, J. G., & Zebb, B. J. (1998). Psychometric properties of the MSPSS in older adults. *Aging & Mental Health*, *2*(3), 186-193. https://doi.org/10.1080/13607869856669

Stearns, C. A. (2011). Cautionary tales about extended breastfeeding and weaning. *Health Care for Women International, 32*, 538-554. https://doi.org/10.1080/07399332.2010.540051

Sternthal, B., Phillips, L. W., & Dholakia, R. (1978). The persuasive effect of source credibility: A situational analysis. *Public Opinion Quarterly*, *42*(3), 285-314.

Sundar, S. S. (2009). Media effects 2.0: Social and psychological effects of communication technologies. In R. L. Nabi & M. B. Oliver (Eds.), *The SAGE handbook of media processes and effects* (pp. 545-560). SAGE.

Tampah-Naah, A. M., Kumi-Kyereme, A., & Amo-Adjei, J. (2019). Maternal challenges of exclusive breastfeeding and complementary feeding in Ghana. *PLoS ONE, 14*(5), 1–16. https://doi.org/10.1371/journal.pone.0215285

Tashakori, A., Behbahani, A. Z., & Irani, R. D. (2012). Comparison of prevalence of postpartum depression symptoms between breastfeeding mothers and non-breastfeeding mothers. *Iranian Journal of Psychiatry*, *7*(2), 61–65.

Taveras, E. M., Li, R., Grummer-Strawn, L., Richardson, M., Marshall, R., Rêgo, V. H., Miroshnik, I., & Lieu, T. A. (2004). Opinions and practices of clinicians associated with continuation of exclusive breastfeeding. *Pediatrics, 113*(4), e283-e290. https://doi.org/10.1542/peds.113.4.e283

Tuthill, E. L., McGrath, J. M., Graber, M., Cusson, R. M., & Young, S. L. (2016). Breastfeeding self-efficacy: A critical review of available instruments. *Journal of Human Lactation*, *32*(1), 35-45. https://doi.org/10.1177/0890334415599533

Walker, S. K., & Riley, D. A. (2001). Involvement of the personal social network as a factor in parent education effectiveness. *Family Relations, 50*, 186-193. https://doi.org/10.1111/j.1741-3729.2001.00186.x

Walker, S. K., & Rudi, J. H. (2014). Parenting across the social ecology facilitated by information and communications technology: Implications for research and educational design. *Journal of Human Sciences and Extension, 2*(2), 15-32.

Wang, R., Song, Y., & Zhao, X. (2019). Can self-referential information improve directed forgetting? Evidence from a multinomial processing tree model. *PLoS ONE*, *14*(1), 1–28. https://doi.org/10.1371/journal.pone.0211280

Warwick, C., Rimmer, J., Blandford, A., Gow, J., & Buchanan, G. (2009), Cognitive economy and satisficing in information seeking: A longitudinal study of undergraduate information behavior. J. Am. Soc. Inf. Sci., 60: 2402-2415. https://doi.org/10.1002/asi.21179

Wathen, C. N., & Burkell, J. (2002). Believe it or not: Factors influencing credibility on the Web. *Journal of the American Society for Information Science & Technology*, *53*, 134–144. https://doi.org/10.1002/asi.10016

Westerman, D., Spence, P. R., & Van Der Heide, B. (2014). Social media as information source: Recency of updates and credibility of information. *Journal of Computer-Mediated Communication*, *19*(2), 171-183. https://doi.org/10.1111/jcc4.12041

White, L. L., Cohen, M. Z., Berger, A. M., Kupzyk, K. A., Swore-Fletcher, B. A., & Bierman, P. J. (2017). Perceived self-efficacy: A concept analysis for symptom management in patients with cancer. *Clinical Journal of Oncology Nursing*, *21*(6), E272–E79. https://doi.org/10.1188/17.CJON.E272-E279

Wilson, T. D. (2000). Human information behavior. *Information Science, 3*(2), 49-55. https://doi.org/10.28945/576

Yoon, K., Kim, C. H., & Kim, M. S. (1998). A cross-cultural comparison of the effects of source credibility on attitudes and behavioral intentions. *Mass Communication and Society*, *1*(3-4), 153-173. https://doi.org/10.1080/15205436.1998.9677854

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30-41. https://doi.org/10.1207/s15327752jpa5201_2

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of*

Personality Assessment, *55*(3-4), 610-617.

https://doi.org/10.1080/00223891.1990.9674095

APPENDIX A. SURVEY INSTRUMENT

Think about the sources you *currently* use when you are looking for information related to breastfeeding. What is the source you use *most frequently* right now?

What prompts you to use this source most often?

How many times per week do you *currently* use this source to find information related to breastfeeding? *If you use this source less frequently than once per week, enter "0".*

On the scales below, indicate your feelings about the source you use most frequently for information related to breastfeeding (i.e., the source you identified on the previous page). Numbers 1 and 7 indicate a very strong feeling. Numbers 2 and 6 indicate a strong feeling. Numbers 3 and 5 indicate a fairly weak feeling. Number 4 indicates you are undecided.

This source is

- 1- intelligent
- 2
- 3
- 4
- 5
- 6
- 7- unintelligent

This source is

- 1- untrained
- 2
- 3
- 4
- 5
- 6
- 7- trained

This source

- 1- cares about me
- 2
- 3
- 4
- 5
- 6
- 7- doesn't care about me

This source is

- 1- honest
- 2
- 3
- 4
- 5
- 6
- 7- dishonest

This source

- 1- has my interest at heart
- 2
- 3
- 4
- 5
- 6
- 7- doesn't have my interest at heart

This source is

- 1- untrustworthy
- 2
- 3
- 4
- 5
- 6
- 7- trustworthy

This source is

- 1- inexpert
- 2
- 3
- 4
- 5
- 6
- 7- expert

This source is

- 1- self-centered
- 2
- 3
- 4
- 5
- 6
- 7- not self-centered

This source is

- 1- concerned with me
- 2
- 3
- 4
- 5
- 6
- 7- not concerned with me

This source is

- 1- honorable
- 2
- 3
- 4
- 5
- 6
- 7- dishonorable

This source is

- 1- informed
- 2
- 3
- 4
- 5
- 6
- 7- uninformed

This source is

- 1- moral
- 2
- 3
- 4
- 5
- 6
- 7- immoral

This source is

- 1- incompetent
- 2
- 3
- 4
- 5
- 6
- 7- competent

This source is

- 1- unethical
- 2
- 3
- 4
- 5
- 6
- 7- ethical

This source is

- 1- insensitive
- 2
- 3
- 4
- 5
- 6
- 7- sensitive

This source is

- 1- bright
- 2
- 3
- 4
- 5
- 6
- 7- stupid

This source is

- 1- phony
- 2
- 3
- 4
- 5
- 6
- 7- genuine

This source is

- 1- not understanding
- 2
- 3
- 4
- 5
- 6
- 7- understanding

Thinking about the source you identified on the first page of this survey (the one you currently go to most frequently for information related to breastfeeding), indicate how much you agree with each of the following statements.

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
This source is around when I am in need.	○	○	○	○	○	○	○
I can share my successes with this source.	○	○	○	○	○	○	○
I can share my setbacks with this source.	○	○	○	○	○	○	○

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
This source really tries to help me.	○	○	○	○	○	○	○
I get the emotional help/support I need from this source.	○	○	○	○	○	○	○
This source is a real source of comfort to me.	○	○	○	○	○	○	○
I can count on this source when things go wrong.	○	○	○	○	○	○	○
I can talk about my problems with this source.	○	○	○	○	○	○	○
This source cares about my feelings.	○	○	○	○	○	○	○
This source is willing to help me make decisions.	○	○	○	○	○	○	○

Breastfeeding is a challenging process for many women. The following questions measure how you feel about your breastfeeding experience. There are no 'right' or 'wrong' answers to the following questions. Breastfeeding is a unique experience for each mother/child pair, and we are interested in your **current** breastfeeding experience. *Please indicate your level of confidence for each of the following statements.*

I can always...

	Not at all confident	Somewhat not confident	Neutral	Somewhat confident	Always confident
... determine that my baby is getting enough milk.	○	○	○	○	○
... successfully cope with breastfeeding issues like I have with other challenging tasks.	○	○	○	○	○
... breastfeed my baby without using formula as a supplement.	○	○	○	○	○

	Not at all confident	Somewhat confident	Neutral	Somewhat confident	Always confident
... ensure that my baby is properly latched on for the whole feeding.	○	○	○	○	○
... manage the breastfeeding situation to my satisfaction.	○	○	○	○	○
...manage to breastfeed even if my baby is crying.	○	○	○	○	○
... keep wanting to breastfeed.	○	○	○	○	○

	Not at all confident	Somewhat not confident	Neutral	Somewhat confident	Always confident
... comfortably breastfeed with my family members present.	○	○	○	○	○
... be satisfied with my breastfeeding experience.	○	○	○	○	○
... deal with the fact that breastfeeding can be time-consuming.	○	○	○	○	○
... finish feeding my baby on one breast before switching to the other breast.	○	○	○	○	○
... continue to breastfeed my baby for every feeding.	○	○	○	○	○
... manage to keep up with my baby's breastfeeding demands.	○	○	○	○	○
... tell when my baby is finished breastfeeding.	○	○	○	○	○

You're almost done! Please answer the following demographic questions about yourself.

What is your age?

How many children do you have?

Including the child you are currently breastfeeding, with how many children have you initiated breastfeeding (i.e., provided breast milk at the breast after birth)?

Including the child you are currently breastfeeding, with how many children have you breastfed longer than 3 months?

Including the child you are currently breastfeeding, with how many children have you breastfed longer than 6 months?

What is the age of the child (in months) you are currently breastfeeding? *If your child is less than 1 month old, please enter "0".*

What is the duration (in months) of your current breastfeeding relationship? *If less than 1 month, please enter "0".*

How long (in months) do you hope to breastfeed this child?

What is your current access to the Internet? Check all that apply.

- I access the Internet through a connection at home
- I use cellular data on my phone plan to access the Internet
- I visit a location outside of my home to access the Internet (e.g., library, coffee shop, etc.)
- I do not currently access the Internet
- Other _____

How would you describe yourself? Check all that apply.

- Alaskan
- Native American Indian
- Asian
- Black / African American
- Native Hawaiian / Pacific Islander
- White
- Other _____

What is your marital status?

- Single (never married)
- Married or in a domestic partnership
- Widowed
- Divorced
- Separated
- Other _____

What is the highest level of education you have completed? (If you are currently enrolled in school, please indicate the highest degree you have *received*.

- Less than high school diploma High school degree or equivalent (e.g., G.E.D.)
- Some college, no degree Associate's degree (e.g., A.A., A.S.)
- Bachelor's degree (e.g., B.A., B.S.)
- Master's degree (e.g., M.A., M.S., M.Ed.)
- Professional degree (e.g., M.D., D.D.S., D.V.M.)
- Doctorate (e.g., Ph.D., Ed.D.)

What is your current occupation?

What is your household income?

- Less than $20,000
- $20,000 - $34,999
- $35,000 - $49,999
- $50,000 - $74,999
- $75,000 - $99,999
- $100,000 - $149,999
- More than $150,000

APPENDIX B. CODEBOOK

Code	Definition	Count
Source Affordances		
Convenient	Involving little trouble or effort	119
Quick	Receiving information in a short amount of time	31
Anonymous	Able to access information without providing personal information	4
Searchability	Able to find information by entering keywords	3
Interactive	Involving or offering active participation	2
Free	Without Cost	1
Information Characteristics		
Variety of Information	Offering different or diverse information	38
Research-/Evidence-Based	Having a foundation in a body of facts	17
Quality of Information	Degree of excellence	17
Personalized	Designed or produced to meet someone's individual requirements	7
Practical	Concerned with the use of something rather than with theory and ideas	7
Understandable	Able to perceive the intended meaning of the information	3
Source Characteristics		
Expert (Trained/Experiential)	Comprehensive and authoritative knowledge of or skill in a particular area	75
Trust	Belief in the reliability of the source	7
Non-Judgmental	Absence of a critical point of view	6
Heuristics		
Recommended by Others	Suggested by another individual	13
Known Source	Recognized or familiar	4
Only Choice	Did not have another source available	2
Individual Preferences		
Solidarity	Mutual support	8
Relationship	Connection with other mothers	4
Comfortable	Providing physical or mental ease	3
Support	Give/receive assistance	3
Preference	A greater liking for one alternative over others	1

APPENDIX C. CORRELATION MATRIX

		Expertise	Goodwill	Trustworthiness	Social Support	Breastfeeding Self-Efficacy
Expertise	r^2	1				
	p					
Goodwill	r^2	.646**	1			
	p	.000				
Trustworthiness	r^2	.816**	.851**	1		
	p	.000	.000			
Social Support	r^2	.255**	.546**	.435**	1	
	p	.000	.000	.000		
Breastfeeding Self-Efficacy	r^2	.186**	.138*	.156*	.147*	1
	p	.005	.040	.020	.028	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).