

**Breastfeeding Support Through Social Media Groups**

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N5624 Advanced Practice VI: DNP Practicum

May 01, 2022

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### **Abstract**

Breastfeeding is the most influential behavior to reduce infant and maternal morbidity and mortality rates. Despite the health benefits, only a quarter of infants in the United States are exclusively breastfed to six months. Evidence acknowledges that breastfeeding longevity and exclusivity are increased when women receive breastfeeding support. The purpose of this descriptive research study was to determine if participation in social media breastfeeding support groups increases exclusive breastfeeding to six months of age, improves attitude, and fosters self-efficacy. The sample comprised 32 newly postpartum mothers, born between 1980 and 1999, who participated in one of four social media breastfeeding support groups. Participants were followed through six months postpartum via social media. Breastfeeding attitude and self-efficacy were measured through the Iowa Infant Feeding Attitude Scale and the Breastfeeding Self-Efficacy Scale- Short Form. Data from pre- and posttest surveys were analyzed using descriptive and inferential statistics. Participating in social media breastfeeding support groups doubled the rate of exclusive breastfeeding to six months compared to the to the U.S. national average in 2019. Breastfeeding attitude and self-efficacy remained consistent suggesting a positive attitude and self-efficacy towards breastfeeding. Evidence suggests social media breastfeeding support groups can be a supportive resource for breastfeeding women, positively influencing breastfeeding exclusivity and longevity.

*Keywords:* breastfeeding attitude, exclusive breastfeeding, millennial women, self-efficacy, social media, social support

### **Breastfeeding Support Through Social Media Groups**

Breastmilk is considered the gold standard of infant nutrition (Center for Disease Control and Prevention [CDC], 2020b; Kramer & Kakuma, 2002; Wilson, 2020). Breastfeeding is the most influential behavior to reduce infant and maternal morbidity and mortality rates. Exclusive breastfeeding through six months of age significantly improves the health of mothers and infants. Support through social media is linked to an increased duration of breastfeeding (Robinson et al., 2019; Wilson, 2020).

### **Significance**

Breastfeeding is associated with reduced rates of morbidity and mortality as well as cognitive benefits for both mothers and infants (Danawi et al., 2016; de la Mora & Russell, 1999; Office of Disease Prevention and Health Promotion [ODPHP], 2020; Victora et al., 2016). Exclusive breastfeeding during the first six months of life is associated with reduced infections, asthma, diabetes, obesity, sudden infant death syndrome, and necrotizing enterocolitis in preemies (Black et al., 2020; CDC, 2020b; Department of Health and Human Services [HHS], 2011). Breastfeeding lowers the risk of maternal high blood pressure, type two diabetes, and breast and ovarian cancer (Black et al., 2020; CDC, 2020b; HHS, 2011). Families who practice breastfeeding recommendations could save between \$1,200 to \$1,500 annually on infant formula (HHS, 2011). Evidence demonstrates that the United States could save an annual \$13 billion in medical costs if 90% of American families followed recommended guidelines to exclusively breastfeed through six months (HHS, 2011).

Breastfeeding is the ideal method for infant feeding (American Academy of Family Physicians [AAFP], 2020; CDC, 2020a; HHS, 2011). The American Academy of Pediatrics (AAP), CDC, and the World Health Organization (WHO) recommend exclusive breastfeeding for the first six months of age with continued breastfeeding for one year or longer (CDC, 2020b; Kramer & Kakuma, 2002). Despite the health benefits of exclusive breastfeeding through six months, the proportion of breastfed infants has fluctuated throughout the years, with a significant decline in the 21<sup>st</sup> century (ODPHP, 2020).

**National Issue**

Nearly four million infants are born annually in the United States (CDC, 2020b). Based on data from 2019, the CDC reports about 84.1% of infants were ever breastfed (CDC, 2020b). In the United States, the proportion of women exclusively breastfeeding to six months of age was about 25% in 2019. Due to the decline in duration of breastfeeding, Healthy People 2030 set a goal of 42.4% to increase the proportion of infants who are breastfed exclusively through six months of age (ODPHP, 2020).

Duration of breastfeeding is significantly greater among mothers who have social support (Danawi et al., 2016; McFadden et al., 2017; U.S. Prevention Service Task Force [USPSTF], 2016; Wilson, 2020). Social media breastfeeding support groups (SMBSGs) offer a means for breastfeeding social support (Black et al., 2020; Niela-Vilén et al., 2016; Robinson, 2019). Wilson (2020) reported exclusive breastfeeding to six months was three times the national average in mothers who followed SMBSGs.

**Diversity Considerations**

Racial disparities exist with breastfeeding initiation and duration (Danawi et al., 2016). As reported by the CDC, non-black infants in the United States are less likely to be breastfed compared to Asian and Hispanic infants (CDC, 2020b). Hispanic mothers are most likely to initiate and maintain breastfeeding whereas Black mothers are least likely (Danawi et al., 2016). Comparing non-black and black infants in the United States, initiation rates were lower among black infants in 23 states (Danawi et al., 2016). In 14 states, primarily in the south and Midwest United States, the rates are even lower in black infants (CDC, 2020b).

Social protection and support are needed to empower mothers to breastfeed successfully. Cultural norms of breastfeeding affect various populations (Danawi et al., 2016). Conveniently, various populations with diverse sociodemographic backgrounds, expanding across national borders, comprise social media groups (Wilson, 2020). Through SMBSGs, mothers of many cultures can receive

breastfeeding support and confirmation that exclusive breastfeeding is the social norm (Niela-Vilén et al., 2016; Clapton-Caputo et al., 2020).

### **Problem, Purpose**

#### **Problem Statement**

Breastfeeding women with limited social support report insufficient breastfeeding knowledge and confidence and a negative attitude towards breastfeeding, which lessens the likelihood of exclusive breastfeeding through six months of age (Bridges, 2016; Skelton et al., 2018; Wilson, 2020). In the United States, national rates of exclusive breastfeeding to six months of age are below the recommended length of time advised by the AAP and WHO (CDC, 2020b; Kramer & Kakuma, 2002). Limited months of breastfeeding can have detrimental health outcomes for infants and mothers (CDC, 2020a; USPSTF, 2016). Breastfeeding women often lack the support they need to continue breastfeeding (Black et al., 2020; CDC, 2020a; Regan & Brown, 2019; Wagg et al., 2019; Wilson, 2020).

#### **Purpose Statement**

Evidence acknowledges that breastfeeding longevity and exclusivity are prolonged when women receive breastfeeding support (McFadden et al., 2017). The primary purpose of the online breastfeeding support project is to determine if participation in SMBSGs increases exclusive breastfeeding to six months of age and offers positive social support to breastfeeding mothers of the millennial generation, resulting in improved breastfeeding attitude and self-efficacy. The secondary purpose is to explore the association of social support with breastfeeding duration and exclusivity to six months as well as breastfeeding attitude and self-efficacy in mothers who participate in online social media groups for breastfeeding support.

#### **Facilitators, Barrier, Sustainability**

##### ***Facilitators***

Significant strengths were present in implementing and completing the study. A similar study on social media breastfeeding support groups was conducted by Jane C. Wilson PhD, MSN, BSN, who was consulted for this project (Wilson, 2020). Social media groups who participated in Dr. Wilson's research were contacted to participate in this study. Using a familiar researcher and similar social media groups should create a comfort level with site administrators, facilitating ease of agreement with participating in a similar study. Implementing a study through an internet-based application can be a cost-effective approach, performed in a time-efficient manner. Participation in SMBSGs was at no cost to the participant or student investigator.

### ***Barriers***

Barriers existed with project implementation. A significant barrier was the length of time to perform the study, which could negatively impact attrition. The study extended from one month postpartum to six months postpartum. This period allowed results to be compared to the United States national average of exclusively breastfeeding six months postpartum.

### ***Sustainability***

Due to project strengths, the potential of project implementation remained high. Implementing an inexpensive project highlighted feasibility of the study. The research experience of Dr. Wilson potentiated the success of conducting the study. Favorable results of the study heighten the sustainability of social media breastfeeding support groups.

## **Review of Evidence**

### **Inquiry**

Evidence suggests potential to increase exclusive breastfeeding rates through six months of age by participating in social media breastfeeding support groups (Black et al., 2020; Skeleton et al., 2018; Wilson, 2020). The primary research question was, in breastfeeding women born between 1980-1999 who are within one month postpartum and exclusively breastfeeding, does participation in social media



breastfeeding support groups improve exclusive breastfeeding at six months of age compared to the U.S. national average? The secondary question was, in mothers who participate in online social media groups for breastfeeding support, are breastfeeding duration and exclusivity associated with breastfeeding attitude and self-efficacy?

### **Search Strategies**

An extensive literature search was performed to identify knowledge that currently exists on breastfeeding and peer support. Strategies for finding relevant evidence-based articles were achieved using the University of Missouri Kansas-City (UMKC) Health Sciences Library. The databases included CINAHL, PubMed, and Medline. Keywords and phrases used alone and combined included breastfeeding, social media support groups, online support, peer support, social support, exclusive breastfeeding to six months, clinical guidelines, attitude, and self-efficacy. Search results were limited to peer-reviewed articles in English and published after the year 2002; however, one citation validating a measurement tool was dated 1999.

Titles were selected based on relevance to the research topic. Over 90 abstracts were reviewed for inclusion, and after a full text review, thirty studies were included in the synthesis of evidence. Twelve were quantitative studies. Five were level I evidence including two global systematic reviews and a meta-analysis of 73 randomized control trials (RCT) reporting that support from non-professionals is associated with an increase in exclusive breastfeeding to six months. Three were level II evidence (RCTs), and one was level III evidence (systemic review cohort study). Five were level IV evidence including three cross-sectional and three cohort studies. Of the qualitative evidence, one was level V evidence representing systemic reviews, five were level VI evidence from single qualitative studies, and 10 were level VII evidence from expert opinion or case reports. Two references were level I evidence based guidelines from committees such as the AAP, ACOG, CDC, HHS, USPSTF, and WHO (See Appendix A and B).

**Evidence by Themes**

The synthesis of the evidence originated from the literature review (See Appendix C). Five evidence themes emerged from the literature search. Evidence themes included breastfeeding recommendations, breastfeeding linked mortality and morbidity, social media breastfeeding support, factors influencing breastfeeding duration, and measurement instruments. See Appendix D for Definition of Terms.

***Breastfeeding Recommendations, Guidelines***

The American Academy of Pediatrics recommend exclusive breastfed for the first six months of age (CDC, 2020b). According to the WHO, no additional nutrition, be foods or fluid, not even water, except for breastmilk be consumed by the infant for six months of life; however, vitamins, minerals, and medicines in the form of drops or syrup are allowed (WHO, 2021). The AAP recommends the mother continue to breastfeed after six months while gradually introducing solid foods into the infant's diet. After one full year of breastfeeding, breastfeeding may continue if desired.

Globally, the WHO recommends exclusive breastfeeding to six months of age to achieve optimal growth and development and better health outcomes (Kramer & Kakuma, 2002). After six months of exclusive breastfeeding, it is recommended to provide safe and adequate food while breastfeeding to meet the evolving nutritional requirements for infants. The WHO suggests continued breastfeeding through two years.

The Surgeon General's Call to Action to Support Breastfeeding recommends providing support to mothers who decide to breastfeed (HHS, 2011). Community support should be offered to mothers gaining access to peer support. The United States Preventative Service Task Force recommends peer support for breastfeeding women as a primary care intervention (USPSTF, 2016).

***Breastfeeding Morbidity and Mortality, Benefits***

Certain chronic diseases could be reduced by prolonged breastfeeding. Breastfeeding is reported to reduce cardiovascular disease, diabetes, obesity, and breast and ovarian cancers, representing over three-quarters of the deaths in the United States (Danawi et al., 2016, Victora et al., 2016). Breastfeeding boosts the immune system and provides resistance to certain infections. Exclusive breastfeeding during the first six months of life is linked to reduced respiratory and gastrointestinal infections, including hospitalizations related to pneumonia, vomiting, and diarrhea (CDC, 2020a). Acute otitis media, asthma, diabetes, obesity, sudden infant death syndrome, and necrotizing enterocolitis in preemies are reduced by exclusive breastfeeding to six months of age (Black et al., 2020; CDC, 2020b; HHS, 2011). Breastfeeding lowers the risk of maternal high blood pressure, type two diabetes, and breast and ovarian cancer (Black et al., 2020; CDC, 2020a; HHS, 2011). Breastfeeding is not only a lifestyle decision but an investment in health (CDC, 2020a).

Breastmilk is a personalized nutrition and medicine for infants and mothers. The nutritional advantages of breastmilk and protection against disease are incomparable (Victora et al., 2016). The microbiome in breastmilk has long-term effects on immune and metabolic homeostasis and provides prebiotics to support growth of good bacteria (Victora et al., 2016). Besides the nutritional content, breastmilk is universally economical.

### ***Social Media Breastfeeding Support***

**Millennial Mothers.** Women between the ages of 21 and 40, born between 1980 and 1999, represent the Millennial generation (Wilson, 2020). Millennial mothers are women in their childbearing years and have a significant presence online (Frazer et al., 2015; Hussey, 2016, Wilson, 2020). The millennial generation has always had instant access to technology (Hussey, 2016). Millennials are skilled with multi-tasking, accustomed to immediate satisfaction and feedback, and experience family and peer support through social media (Frazer et al., 2015; Wilson, 2020). Communicating through social

networking sites is the mainstream mean of communication for millennials as they often prefer texting to phone calls or face-to-face communication (Frazer et al., 2015; Hussey, 2016).

The millennial generation seeks support through social media (Hussey, 2016). Communication through social media offers flexibility, especially to mothers who need support or advice during late night or early morning feedings. Online sources of breastfeeding support are both cost-effective and convenient for millennial mothers. Characteristics of the millennial generation make social media a suitable resource for breastfeeding knowledge and support (Hussey, 2016).

A limitation to posted information on various social media groups is the credibility and quality of the content. Not all information posted is evidence based. The majority of SMBSGs request that breastfeeding recommendations be guided by evidence with the addition of International Board Certified Lactation Consultants or professional lactation educators that monitor postings and revise, if necessary, to provide evidence based support. It is assumed that women chose which group to join based on group characteristics and similar sociodemographic. More research is needed on how group characteristics influence breastfeeding duration and support.

**Breastfeeding Support.** Breastfeeding support is defined as available information and assistance for successful breastfeeding (Robinson et al., 2019). Social support is a key determinate of health as it helps people live healthier lives by supporting one another (Danawi et al., 2016). Many mothers rely on social support for advice (Clapton-Caputo et al., 2020). One factor for reduced breastfeeding rates includes lack of social support (Black et al., 2020; Niela-Vilén et al., 2016; Wilson, 2020). Evidence suggests mothers who perceive a lack of social support for exclusive breastfeeding are more likely to stop breastfeeding before six months (Wilson, 2020). Ninety-seven percent of women decide on breastfeeding prior to birth (Ballesta-Castillejos, 2020). The CDC identifies the early postpartum period as a vital time to provide breastfeeding support (CDC, 2020a; Wilson, 2020).

Using the internet as a resource for health is a frequent occurrence, with social support being central to healthy living (Bridges, 2016; Oh et al., 2013). Mothers use social media to give and receive support (Duggan et al., 2015). Social media breastfeeding support groups provide evidence-based information, appraisal, and emotional support (Black et al., 2020; Wilson, 2020). Evidence from a systemic review of 73 studies and 83,246 families demonstrated an increase in breastfeeding longevity and exclusivity when women receive breastfeeding support (McFadden et al., 2017).

Breastfeeding support can be offered through various methods, including professional or peer support. Evidence from a Cochrane review identified that support from non-professionals has been associated with an increased duration of exclusive breastfeeding to six months compared to support from professionals (McFadden et al., 2017). Clapton-Caputo et al. (2020) found that support from healthcare providers is often perceived as less important than social support. Some healthcare professionals do not have adequate education on techniques to overcome breastfeeding challenges; thus, women who encounter providers with limited breastfeeding knowledge do not receive quality breastfeeding support (McFadden et al., 2017). Descriptive analysis confirmed that mothers' perceptions of doctors and nurses were that they received little training on breastfeeding (Niela-Vilén et al., 2016). Mothers stated that seeking help from other breastfeeding mothers was a crucial component to their breastfeeding success.

**Social Media Support Groups.** Social media breastfeeding support groups can motivate mothers to continue exclusive breastfeeding to reach their personal breastfeeding goals by offering social support and practical information (Clapton-Caputo et al., 2020). A study completed by Wilson (2020) reported participation in SMBGSs increased exclusive breastfeeding to six months to 66 percent compared to the national average of 25.6 percent in 2019. Wilson compared the relationship between participating in SMBSGs and duration of exclusive breastfeeding. Two hundred and forty women participated in this study, and over half of the women exclusively breastfed to six months.

Robinson et al. (2019) aimed to explore sources of support among breastfeeding mothers participating in SMBSGs and how support received from social media translated to positive breastfeeding behaviors. This study focused on African American women, with 277 mothers participating. The average duration of breastfeeding extended to nine months, with the average intended duration of breastfeeding was 19 months. Participants stated the most amount of breastfeeding support they received was from the SMBSG. Social media support was significantly linked to the intended duration of breastfeeding ( $p < 0.05$ ; Robinson et al., 2019). Evidence highlights that online social media support can assist mothers in achieving and surpassing their breastfeeding goals.

Through qualitative analysis, Black et al. (2020), Bridges (2016), Clapton-Caputo et al. (2020), Niela-Vilén et al. (2016), and Skelton et al. (2018) aimed to discover how social media support groups supported breastfeeding mothers. Supporting themes of SMBSGs included normalizing breastfeeding, empowerment, resource, shared experiences, and community. Mothers stated that SMBSGs helped normalize breastfeeding and combat judgment. Mothers received confidence, empowerment, and support, discussing a sense of accountability in the group to encourage one another. Social media breastfeeding support groups offered real-time answers and accurate information with a high level of availability, available 24/7 (Black et al., 2020; Niela-Vilén et al., 2016). The main theme discussed in SMBSGs was community with a strong sense of confidentiality (Bridges, 2016; Clapton-Caputo et al., 2020; Niela-Vilén et al., 2016; Skelton et al., 2018).

### ***Factors Influencing Breastfeeding Duration, Attitude and Self-Efficacy***

Breastfeeding social support directly impacts breastfeeding knowledge, confidence, and attitudes with a statistically significant effect on influencing exclusive breastfeeding to six months,  $p < 0.002$  (Wilson, 2020). Wilson found that mothers who report greater social support also report a greater confidence in breastfeeding, increased breastfeeding knowledge, and a positive attitude towards breastfeeding. Consequently, the mothers have a higher likelihood of continued exclusive breastfeeding.

Research illustrates that women who perceive greater social support also report increased knowledge and confidence with breastfeeding, increasing rates of continued breastfeeding (Black et al., 2020; Wilson, 2020).

Robinson et al. (2019) reported that self-efficacy and attitudes are significant predictors for intended breastfeeding duration with  $p < 0.001$ . Attitude is a predisposed state of mind and expressed through a behavior (de la Mora et al., 1999). Maternal attitude is an important predictor of breastfeeding methods and breastfeeding duration (de la Mora et al., 1999; Wilson, 2020). Breastfeeding attitude is a strong predictor for exclusive breastfeeding (Casal et al., 2019).

Self-efficacy is a strong predictor of breastfeeding duration (Dennis, 2003). Self-efficacy is the belief that a behavior will generate a particular outcome and confidence that they can complete a certain task or behavior to produce the expected outcome (Dennis, 2003). Breastfeeding self-efficacy is a mother's confidence that she will complete the necessary actions to breastfeed her infant (Robinson et al., 2019). Breastfeeding self-efficacy influences breastfeeding duration as it predicts whether a mother chooses to breastfeed, amount of effort expended, and perseverance through the challenges until she is successful with breastfeeding.

### ***Measurement Instruments***

Repeat studies illustrate how data from the Iowa Infant Feeding Attitude Scale (IIFAS) and the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) can be utilized in structured questionnaires to measure breastfeeding attitude and self-efficacy (Casal et al., 2017; de la Mora et al., 1999; Dennis, 2003; Niela-Vilén et al., 2016; Robinson et al., 2019). Through a literature review it was determined that the IIFAS has been used over 27 times to explore maternal attitude towards breastfeeding and association with method of feeding (Casal et al., 2017). Robinson et al. (2019) utilized the IIFAS and BSES-SF in a structured questionnaire to identify behavioral outcomes among breastfeeding mothers who follow Facebook breastfeeding support groups. Data collected from the IIFAS and the BSES-SF

determined if an internet-based peer support group had an effect on breastfeeding attitude or self-efficacy compared to routine care in mothers with preterm infants (Niela-Vilén et al., 2016). Results of Niela-Vilén et al. (2016) and Robinson et al. (2019) validated that breastfeeding attitude and self-efficacy directly correlate with breastfeeding duration.

## **Evidence Discussion**

### ***Summary of Evidence***

Exclusive breastfeeding to six months of age significantly reduces infant and maternal disease and death (Danawi et al., 2016; ODPHP, 2020; Victora et al., 2016). Evidence acknowledges that breastfeeding longevity and exclusivity are prolonged when women receive breastfeeding support (Robinson et al., 2019; Wilson, 2020). Greater social support positively influences breastfeeding attitude and self-efficacy, increasing breastfeeding duration and exclusivity. The USPSTF recommends peer support as a primary care prevention to increase breastfeeding longevity (USPSTF, 2016). Online support groups are actively used for peer-led interventions to positively influence breastfeeding women, influencing breastfeeding exclusivity and longevity (Robinson et al., 2019; Wilson, 2020). Characteristics of the millennial generation make social media a suitable resource for breastfeeding knowledge and support.

### ***Evidence Strength***

Breastfeeding has infant, maternal, and socioeconomic benefits (AAFP, 2020; American College of Obstetricians and Gynecologists [ACOG], 2021; CDC, 2020a; HHS, 2011; Victora et al., 2016). The AAP, AAFP, ACOG, and WHO recommend exclusive breastfeeding to six months of age to achieve optimal growth and development and reduce disease and death (AAFP, 2020; ACOG, 2021; CDC, 2020a; Kramer & Kakuma, 2002). If breastfeeding were near the universal level, 823,000 annual deaths could be prevented in children less than five years of age, as well as 20,000 annual deaths from breast cancer (Victora et al., 2016). The ODPHP Healthy People 2030 has set the target goal for exclusive breastfeeding



to six months at a minimum of 42%, and currently the rate is around 25% (ODPHP, 2020). Peer support for breastfeeding women is a recommended primary care intervention by the USPSTF (USPSTF, 2016).

A systematic literature review compiling 73 articles identified sources of support for breastfeeding mothers (McFadden et al., 2017). Support from non-professionals was associated with increased duration of exclusive breastfeeding to six months compared to support from professionals (Ballesta-Castillejos et al., 2020; McFadden et al., 2017; Robinson et al., 2019). Robinson et al. (2019) reported that support from SMBSGs increased the average duration of breastfeeding to nine months with an intended duration of breastfeeding to 19 months. Wilson (2020) reported that participation in SMBSGs increased exclusive breastfeeding to six months to 66 percent compared to the national average of 25.6 percent in 2019. Breastfeeding longevity and exclusivity are closely linked to social support (Niela-Vilén et al., 2016).

Mothers born between 1980 and 1999 are proficient with electronic devices and have a significant presence online (Wilson, 2020). Millennial women often prefer texting or online communication to face-to-face interaction (Frazer et al., 2015; Hussey, 2016; Wilson, 2020). The millennial generation seeks support through social media (Hussey, 2016; Wilson, 2020). Social media breastfeeding support groups provide a cost-effective trusted community support that is immediate and practical with valuable information (Bridges, 2016; Niela-Vilén et al., 2016; Regan & Brown, 2019; Wilson, 2020). Early breastfeeding cessation is influenced by many health inequities (Danawi et al., 2016; Victora et al., 2016). Social media breastfeeding support groups offer diversity to mothers of all sociodemographic.

Modifiable factors that positively influence breastfeeding longevity are breastfeeding self-efficacy and maternal attitude towards breastfeeding (Meedya et al., 2010; Robinson et al., 2019). Maternal breastfeeding self-efficacy and attitude are positively influenced by effective breastfeeding support through online social media groups (Black et al., 2020; Bridges, 2016; Niela-Vilén et al., 2016;

Robinson et al., 2019; Skelton et al., 2018; Wilson, 2020). Wilson (2020) identified how breastfeeding support had a significant effect ( $p < 0.002$ ) on participants' breastfeeding confidence and attitude; participation in SMBSGs increased exclusive breastfeeding to six months by three times the national average.

### ***Limitations***

Even though evidence links breastfeeding support and social media with breastfeeding duration, limitations exist. Of the combined literature, only 12 studies provided strong evidence between levels I through IV, with five of the 12 as level IV evidence. Women who had negative perceptions of online support groups had either left the group or never joined, altering the selection bias (Clapton-Caputo et al., 2020; Niela-Vilén et al., 2016; Regan & Brown, 2019; Wilson, 2020). High attrition rates were a limiting factor affecting the quality of data and validity of results. Regarding the social media support groups, the credibility and quality of the groups were not explored with the assumption that the mothers chose a group that best aligned with their culture and values (Wilson, 2020). Information posted may or may not have been evidence based. Most studies linking social media support and duration of breastfeeding included convenience sampling, increasing the homogeneity of the sample (Black et al., 2020; Regan & Brown, 2019; Skelton et al., 2018; Wilson, 2020).

### ***Gaps***

Following social media for breastfeeding support is relatively a new concept with limited evidence. The systemic review by McFadden et al. (2017) identified that most breastfeeding support was face to face or telephone contact. Literature that suggested an association between participation in breastfeeding social support groups with breastfeeding longevity and exclusivity was mostly qualitative, identifying how self-efficacy and attitude increased duration of breastfeeding (Black et al., 2020, Bridges, 2016; Clapton-Caputo et al., 2020; Regan & Brown, 2019; Skelton et al., 2018; Wagg et al., 2019). Quantitative research in identifying how SMBSGs influence duration of breastfeeding is limited to

Niela-Vilén et al. (2016), Robinson et al. (2019), and Wilson (2020). Future research is needed on the potential that social media has for breastfeeding support.

### **Theory**

Breastfeeding is a health promotion behavior for mothers and their infants (Cangöl & Şahin, 2017). Seeking social support to continue exclusive breastfeeding is based on the conceptual framework of Pender's revised Health Promotion Model (HPM; See Appendix E). Nola Pender, Ph.D., is a nursing theorist who created the HPM to combine the nursing perspective with social psychology. Pender's definition of health expands across human development and provides a framework to explain and predict health behaviors (Peterson & Bredow, 2017). The HPM guides the inquiry and newly postpartum mothers through health promotion actions and behaviors that increase the duration of exclusive breastfeeding to promote health benefits for both the mother and infant.

The concept of health promotion focuses on the whole person and their lifestyle, promoting the positive aspects of health, including one's strength, resilience, potential, capabilities, and available resources (Peterson & Bredow, 2017). Major concepts of the model predict the behavioral outcome. Concepts include, an individual's characteristics and experiences, behavior-specific cognitions and effect, perceived benefits and barriers, perceived self-efficacy, activity-related effects, interpersonal influences, and situational demands (Cangöl & Şahin, 2017; Peterson & Bredow, 2017). Interpersonal influences from social support can affect the commitment or engagement in exclusive breastfeeding. Maternal characteristics and experiences, mental health, breastfeeding confidence and attitude, an infant's behavior, and situational demands influence breastfeeding behavior.

Self-efficacy is the main concept of the HPM (Alligood, 2014). Self-efficacy is the confidence a mother has in her ability to breastfeed. A mother's breastfeeding confidence influences her choice to breastfeed and ability to master the art of breastfeeding to continue breastfeeding to her desired goal. Stronger self-efficacy increases the commitment of action and engagement of a behavior (Dennis, 2003).

Mothers with strong self-efficacy in breastfeeding are more likely to apply more effort, critically think through challenges, and seek help to rise above the challenges to prolong breastfeeding.

The HPM is a middle range theory that offers a holistic approach and predictor for health promoting behaviors which can be utilized in both research and clinical practice (Alligood, 2014). The model has shown significant success in various settings and populations, including pregnant women and postpartum women (Cangöl & Şahin, 2017; Wilson, 2020). Wilson (2020) and Cangöl and Şahin (2017) based their breastfeeding support research on Pender's HPM. Both studies aimed to increase exclusive breastfeeding to six months postpartum. Wilson (2020) explored how following SMBSGs influence breastfeeding sustainability in newly postpartum mothers of the millennial generation. Cangöl and Şahin (2017) implemented a breastfeeding motivation program through pregnancy and postpartum to increase breastfeeding duration and frequency. Both studies determined perceived breastfeeding self-efficacy promoted favorable breastfeeding behavior and exclusivity.

## **Methods**

### **Institutional Review Board Approval**

The University of Missouri-Kansas City (UMKC) Institutional Review Board (IRB) determined the project as exempt research in July 2021. The project sites did not have institutional review boards. Two amendments were made during project intervention which required IRB approval. A revision to the recruitment post was approved in September 2021. A revision to the reminder post for the posttest survey was approved in January 2022 (See Appendix F and Appendix G).

### **Site Approval**

Four Facebook SMBSGs provided permission for project implementation. Site approval was granted from each site administrator. After full site approval, the project was initiated (See Appendix H).

### **Ethical Considerations**

Participation was voluntary, and participants provided informed consent. Demographics were collected on the pre surveys and lacked identifiers. Participant names were not requested in the data collection; however, each participant created a code to allow pairing of data. Full disclosure of the study goals and data to be collected and reported were presented to the participants. Results were reported as aggregates without identifiers. Neither the researcher nor UMKC had a personal or financial conflict of interest with the research study.

The study focused on generating evidence for practice, aiming to improve health outcomes for newly postpartum mothers and their infants. The benefits of the project, increasing the duration of exclusive breastfeeding, prompting healthier outcomes for both women and children, outweighed the minimal risks of breach of privacy and confidentiality. Participants had the right to withdraw at any time during the project. Breastfeeding is a phenomenon that affects all women and children regardless of ethnicity, socioeconomic status, or geographic location. Inviting diverse breastfeeding groups to participate in the study offered validity to generalization of the study findings.

### **Funding**

Social media breastfeeding support groups are a low-cost approach to gaining immediate access to various sociodemographic populations. External funding for project implementation was not required; however, there was a cost for project dissemination. The researcher was selected to present at the Midwest Nursing Research Society (MNRS) Conference in April 2022. Funding for project dissemination was awarded by the UMKC Women's Health Council, Graduate Assistance Fund. Approval to use the measurement instruments and Dr. Jane C. Wilson's consultation was at no cost to the student investigator (See Appendix I).

### **Setting and Participants**

#### ***Participant Sampling***

The population of interest was newly postpartum mothers, born between 1980 and 1999, who participate in at least one of the selected SMBSGs. The investigator recruited a convenience sample of newly breastfeeding millennial mothers participating in four selected SMBSGs. Participant inclusion criteria included English-speaking millennial mothers, born between 1980 and 1999, within one month postpartum, and exclusively breastfeeding their infant. Primiparous or multiparous women of all sociodemographic backgrounds were invited to join. Exclusion criteria included women with infants who have or had life-threatening conditions and premature infants treated in neonatal intensive care. Women who were not exclusively breastfeeding and not members of one of the selected social media groups were excluded from participation. Women of infants born prematurely who did not require neonatal intensive care support were invited to join the project. Participants who did not complete the surveys will have their data removed from the analysis (Appendix J).

### ***Setting***

The study was implemented through four social media breastfeeding support groups within Facebook. A variety of sociodemographic groups were chosen to represent the vast population of breastfeeding mothers. Groups include various races and ethnicities, working mothers, mothers who stay at home, military mothers, primiparous and multiparous mothers, and other diverse characteristics. The number of members in the selected social media groups ranged from 1,500 to over 23,000 followers. Through social media, invitations for the study span across state and national borders. The purpose of each social media group is to provide breastfeeding education and support with participant safety and confidentiality as a priority. Each group follows recommended breastfeeding guidelines from the CDC and AAP.

### **Evidence Based Project Implementation**

The project was implemented over social media. Participants were recruited within one month of delivery and followed to six months postpartum. Demographic data included participant age, race or

ethnicity, education, marital status, employment, annual household income, parity, and prenatal breastfeeding education. These factors significantly impact breastfeeding duration and exclusivity (Robinson et al., 2019; Victora et al., 2016; Wilson, 2020). Social support was measured indirectly through the IIFAS and BSES-SF measurement instruments assessing breastfeeding self-efficacy and attitude at the initiation of the support group (pretest survey) and post-six months of involvement (posttest survey) in the support group. Breastfeeding exclusivity and duration were measured post-intervention and compared to the United States national average of breastfeeding exclusivity to six months (See Appendix K).

During project proposal, the student investigator joined each SMBSG, contacted the site administrators via email, provided information about the project, and requested permission to implement the project and recruit participants. Participant recruitment began through a post on each approved site's discussion board, defining the purpose of the study and requesting participation in the project. Interested participants were then taken to the research information script via a link through Research Electronic Data Capture (REDCap) within the initial recruitment posting (Harris et al., 2019). Participants who agreed to participate completed surveys at one month postpartum (pretest survey) and again at six months postpartum (posttest survey) through the REDCap link. The initial link remained open for five weeks. The posttest survey was posted on the social media site's discussion board six months after project initiation along with a reminder announcement. The posttest survey reminder post remained open for another five weeks.

The pre- and post-surveys include the two surveys, the IIFAS and the BSES-SF. The pretest survey also included a demographics questionnaire. The posttest survey included one follow-up question measuring the effectiveness of SMBSGs, "How many months did you exclusively breastfeed?" The scale measuring the duration a breastfeeding consisted of six items on a 6-point Likert scale ranging from 1 (*1 month*) to 6 (*6 months*).

***Project Timeline***

From project proposal to results presentation, the project timeline spanned across 12 months (See Appendix L). Research site and institutional review board approval occurred during the Summer of 2021. Fall 2021 through February 2022 included the survey data collection. Data analysis occurred in March 2022, with result presentation in April and May 2022. The project timeframe provided six months of data to compare to the U.S. national breastfeeding averages. (See Appendix M for Logic Model).

**Change Process and EBP Model*****Organizational Change Process***

The organizational change theory to drive the change for this project was Kurt Lewin's change model (Hussain et al., 2018). Lewin's change model includes three stages: unfreezing, movement, and change. For an organizational change to be successful, Lewin states that it must be planned, and the system must be unfrozen (Hussain et al., 2018). Recommending that pregnant women and new mothers participate in SMBSGs to gain breastfeeding support could be implemented through Lewin's change model during antenatal or early postnatal counseling.

During the unfreezing process, organizational change must include employee involvement (Hussain et al., 2018). Results of the study could be presented to providers who care for antenatal or newly postpartum mothers. During the change movement, evidence-based knowledge sharing, and leadership involvement are crucial. Implementation of change occurs when providers assess the need for social support among antenatal and early postpartum mothers. If limited breastfeeding knowledge and confidence are present, recommending participation in SMBSGs for peer support with breastfeeding can occur.

***Evidence-Based Project Model***

The project followed the Clinical Scholar Model guiding evidence-based practice by conducting clinical practice research (Melnyk & Fineout-Overholt, 2019). The study results were evaluated by the



project researcher and compared to current and past published studies to evaluate the evidence and determine the strengths. Results were compared to the United States national average of exclusively breastfed infants to six months of age. A report was drafted with results of the study and practice recommendations based on the findings.

### ***Sustainability***

With positive results, action can be taken to further support and encourage participation in social media breastfeeding support groups. The project can be replicated to strengthen validity of the results. The project outlines the implementation steps, fostering ease of replication. Sustainability was strengthened with a low-cost budget. Due to a lack of statistically significant results, research can be formulated to further explore reasons impacting the success of online support programs. Successful results can be used to strategize an organizational change or improvement opportunity.

### **Study Design**

A descriptive study with a pre- posttest, prospective design was used to investigate the impact of SMBSGs on breastfeeding duration and exclusivity at six months of infant age, attitude, and self-efficacy. The relationships of breastfeeding attitude, self-efficacy, and breastfeeding duration and exclusivity was explored in the study.

### **Validity**

The population sample was represented through various social media groups and sociodemographics. The project was captured in real-time in a real-world setting within social media sites. All social media site participation occurred over Facebook, which is currently the main social networking site used by moms and younger parents (Duggan et al., 2015).

Researcher bias could have been encountered through convenience sampling selection but was hindered by invitation to all the Facebook site members who meet inclusion criteria. It was assumed that breastfeeding women who have negative perceptions of online social support were inadvertently

omitted from the project due to self-selection. However, through an internet-based setting, data from national participation was projected to add a diverse sample of participants, adding validity to the generalization of the project findings to a diverse population. The sample size had the potential to reach at least 40 mothers within various Facebook SMBSGs. Other variables that could influence social support and breastfeeding exclusivity will be evaluated by collecting participant sociodemographics.

The project aimed to increase the potential to exclusively breastfeed to six months of age through participation in SMBSGs. Through precise instrumentation, direct and indirect influences of breastfeeding duration and exclusivity were explored and measured. The project explored breastfeeding attitudes, self-efficacy, and social support and their relationship with exclusive breastfeeding. The instruments used for this project were the Iowa Infant Feeding Attitude Scale (IIFAS) and the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF). Both scales have been tested and verified for strong validity and reliability, scoring Cronbach's  $\alpha > .85$  on the IIFAS and  $\alpha > .94$  on the BSES-SF (de la Mora, 1999; Dennis, 2003). Social support was indirectly measured by pre- and post-surveys with the IIFAS and BSES-SF, analyzing whether social media groups' participation influences variables that directly relate to sustained breastfeeding exclusivity. The attrition rate was measured and displayed on the participant recruitment flow chart. Statistically significant results could determine effectiveness of social media group participation.

### **Outcomes**

The primary outcome of the study was to discover the impact of SMBSGs on exclusive breastfeeding to six months of age as recommended by the AAP and WHO (CDC, 2020). A secondary outcome explored the impact of SMBSGs on attitude and self-efficacy. The impact social media had on breastfeeding duration and exclusivity was anticipated to have a moderate improvement, positively influencing duration and exclusivity. The project results were compared to a similar study by Wilson

(2020) who found that participation in SMBSGs increased exclusive breastfeeding to three times the national average in 2019.

### **Measurement Instruments**

Breastfeeding behavior is influenced by breastfeeding attitudes, self-efficacy, and social support (Black et al., 2020; Casal et al., 2017; Niela-Vilén et al., 2016; Robinson et al., 2019; Skelton et al., 2018). Effective measurements of these determinants are critical to assess optimal support for breastfeeding mothers comprising strong validity and reliability (Casal et al., 2017). The Iowa Infant Feeding Attitude Scale (IIFAS) and the Breastfeeding Self-Efficacy Scale- Short Form (BSES-SF) were both tested and analyzed, measuring strong validity and reliability ( $p < 0.01$ ; Casal et al., 2017; Dennis, 2003). The IIFAS and BSES-SF were measured pre- and post-six months (See Appendix N).

#### ***Attitude***

The Iowa Infant Feeding Attitude Scale is a measurement tool developed to measure maternal attitude towards breastfeeding. Possible scores ranged from 17 to 85 with higher scores indicating a more positive attitude towards breastfeeding (Casal et al., 2017; de la Mora, 1999). The scale includes 17 items and has been used over 27 times. Half of the questions favor formula feeding and the other half favor breastfeeding. Reliability testing predicted Cronbach's alpha scores between 0.85 to 0.86 (Robinson et al., 2019). Predictive validity demonstrated that a mother's attitude towards breastfeeding is a predictor for the mother's method of feeding ( $p < 0.01$ ; Robinson et al., 2019). Permission was granted on April 02, 2021, by Dr. Arlene de la Mora, Ph.D., to use the IIFAS in the proposed project (See Appendix O).

#### ***Self-efficacy***

The Breastfeeding Self-Efficacy Scale-Short Form is a tool to measure breastfeeding self-efficacy (Dennis, 2003). The BSES-SF has been used across various populations of breastfeeding mothers to measure self-efficacy (Robinson et al., 2019). The BSES-SF contains 14 items assessing breastfeeding

behaviors and cognitions as well as evaluating effectiveness of support interventions. Scores range from 14 to 70 with high breastfeeding self-efficacy scores indicating maternal strength and confidence with breastfeeding, whereas a low score suggests an implication for supplementary breastfeeding support. Cronbach's alpha coefficient yielded 0.94 demonstrating strong reliability (Robinson et al., 2019). Through psychometric analysis, the BSES-SF is a reliable measurement tool for breastfeeding self-efficacy ( $p < 0.001$ ; Dennis, 2003). Permission was granted on May 18, 2021, by Dr. Cindy-Lee Dennis, Ph.D., to use the BSES-SF measurement tool (See Appendix O).

### **Quality of Data**

Sample size was determined through G\*Power 3.1.9.7 calculations. A sample size of 34 participants was required with a two-tailed paired *t*-test with a power of .8, a medium effect size of .5, and an alpha of .05. Comparatively, a sample size of 34 participants was required for an ANOVA with a power of .8, a medium effect size of .5, an alpha of .05, and 2 predictors. A one-way ANOVA was used to measure the relationship between breastfeeding self-efficacy and attitude and exclusive breastfeeding to six months.

Two studies investigated the relationship between online social media breastfeeding support and breastfeeding duration, utilizing the BFSE-SF to measure breastfeeding self-efficacy and the IIFAS to measure breastfeeding attitudes (Cangöl & Şahin, 2017; Niela-Vilén et al., 2016). A RCT by Cangöl and Şahin (2017) measured the effects of a breastfeeding motivational program during pregnancy on breastfeeding frequency and duration using the BSES. An ANOVA was used to analyze the results of the BSES. A RCT by Niela-Vilén et al. (2016) compared the standard of care of breastfeeding mothers of preemies ( $n = 64$ ) to care from a breastfeeding social media support group ( $n = 60$ ). In Niela-Vilén et al. (2016), a paired *t*-test compared pre- and posttest scores from the IIFAS.

Breastfeeding duration was measured via percentage and compared with the United States national average. The CDC Breastfeeding Report Card records breastfeeding duration and exclusivity

biannually through percentages (CDC, 2020). In 2019, the percentage of exclusively breastfed infants through six months was 25.6%. Wilson (2020) followed 241 newly postpartum millennial mothers through participation in SMBSGs through six months postpartum, measuring breastfeeding duration and exclusivity, calculating 66% of the study's population exclusively breastfeed to six months, reporting three times the United States national average.

Participants were recruited within one month after delivery and followed to six months postpartum. Breastfeeding attitude and self-efficacy were measured pre- and post-six months. Breastfeeding exclusivity and duration were measured and compared to the United States national average of breastfeeding exclusivity to six months.

### **Analysis**

Three statistical tests were used to measure the effectiveness of SMBSGs. The means of the IIFAS and the BSES-SF scores compared pre- and post- six months. A paired-sample *t*-test was used to analyze breastfeeding attitude and self-efficacy. Exclusive breastfeeding at six months was reported by percentage and compared to benchmark data. Sociodemographics were displayed in percentages except for participant age which was displayed by age range, mean, and standard deviation. Relationships of exclusivity, attitude, and self-efficacy were explored through a one-way ANOVA.

## **Results**

### **Setting and Participants**

Throughout this study multiple variables were addressed that affect breastfeeding duration and exclusivity. The study occurred through four SMBSGs extending over seven months. A convenience sample of 32 participants completed the pre-test survey which included participant sociodemographics, research information consent, and the IIFAS and BSES-SF. Eight participants completed the post- IIFAS and six completed the post- BSES-SF.

Participants demographics were comparable among the pretest and posttest survey. The majority of participants from the pretest survey were age 21-30, white, graduate with a high school degree, married, employed, an annual household income of \$30,000-\$99,999, and primiparous. When asked whether or not participants received prenatal education, 40.6% answered yes and 59.4% answered no. Education was a tight measure, with 53.1% reporting a high school education as their highest degree, 37.5% reporting an undergraduate degree, and 9.4% reporting a graduate degree. When comparing participant demographics to the posttest survey, much of the data was the similar except marital status. In the posttest survey, the majority of participants were not married.

### **Intervention**

Prior to the project implementation, the student investigator contacted a variety of SMBSGs, requesting permission from site administrators to implement project on social media site. Participant recruitment began in August 2021 through a post on each approved site's discussion board, defining the purpose of the study and requesting participation in the project. Interested participants were then taken to the pretest survey via a link on the recruitment post. To maximize visibility, the recruitment post was pinned to the top of the discussion board daily. After three weeks of recruitment, only six participants had completed the pretest survey, with an initial sample goal of 40 participants. After a discussion with the project preceptor, a revised recruitment post was created and submitted to the UMKC IRB. The revision post increased participation to 32 total participants in the pretest group. After participants completed the pretest survey, they were emailed a personalized link to complete the posttest survey in five months. The combined recruitment links remained open for five weeks.

A reminder post to complete the posttest survey was posted in January 2022, approximately five months after the recruitment post. In case participants deleted their personalized posttest survey link, a backup link was shared with the reminder post. The reminder post was again refreshed to the top to each site's discussion board daily and updated to gain maximum participation. The posttest survey

reminder post remained open for another five weeks. Unfortunately, only a few participants completed both the pre- and posttest survey.

## **Outcome Data**

### ***Breastfeeding Attitude***

Overall, breastfeeding attitude and self-efficacy highly correlated with one another pre- and posttest supporting positive results. The IIFAS scale ranged between 17 to 85 with a higher score indicating a more positive attitude towards breastfeeding and a low score favoring formula. The mean on the pre- IIFAS was 51.16 (n=32) and the mean on the post- IIFAS was 53.5 (n=8). Both scores indicated a *neutral* attitude towards breastfeeding. A slight improvement in the mean scores suggests SMBSGs positively influence breastfeeding attitude. A paired-samples *t*- test was calculated to compare the means of breastfeeding attitude pre- and posttest. No significant difference from the pre- and post- IIFAS was found ( $t(7) = -.577, p > .05$ ).

### ***Breastfeeding Self-Efficacy***

The BSES-SF ranged from 14 to 70, with higher scores indicating a high breastfeeding self-efficacy or strong maternal strength and confidence in breastfeeding and low scores suggesting supplementary breastfeeding support. The mean on the pre- BSES-SF was 55.22 (n=32) and the mean on the post- BSES-SF was 56.17 (n=6). Both scores indicated maternal *confidence* in breastfeeding self-efficacy. As posttest results improved slightly, it can be suggested that SMBSGs positively impact maternal breastfeeding confidence. A paired-samples *t*- test was calculated to compare the means of breastfeeding self-efficacy pre- and posttest. No significant difference from the pre- and post- BSES-SF was found ( $t(5) = -.734, p > .05$ ).

### ***Exclusive Breastfeeding***

Exactly half of the participants in this study exclusively breastfed to six months. Of the six participant in the post- cohort group, 100% exclusively breastfed to three months and 50% exclusively

breastfeed to six months. Rates of exclusive breastfeeding was compared to benchmark data. In 2019, the CDC reported 25.6% of mothers exclusively breastfed to six months. A one-way ANOVA was performed to compare the effect of exclusive breastfeeding on breastfeeding attitude and self-efficacy. A one-way ANOVA revealed that there was not a statistically significant difference between breastfeeding attitude and exclusive breastfeeding ( $F(2,3) = 2.781, p > .05$ ). In comparison, a one-way ANOVA revealed that there was not a statistically significant difference between breastfeeding self-efficacy and exclusive breastfeeding ( $F(2,3) = .026, p > .05$ ; See Appendix P).

## Discussion

### Successes

The results of this study suggest that social support can positively affect breastfeeding duration and longevity. With means from the IIFAS and BSES-SF improving at six months, evidence suggests SMBSGs positively influence breastfeeding attitude and self-efficacy and offer positive social support to breastfeeding mothers. Women who exclusively breastfed through three months and those that exclusively breastfed to six months also reported a higher breastfeeding attitude and self-efficacy. Results suggest breastfeeding exclusivity is prolonged when women participate in online breastfeeding support groups. In this study, the rate of exclusive breastfeeding to six months doubled compared to the U.S. national average in 2019.

### Study Strengths

A strength in this study is in the use of active social media breastfeeding support groups. Through vast participation in social media, recruitment for this study spread across U.S. national borders in a timely low cost manner. The study occurred in real-time, real world setting. Participant privacy was maintained throughout the project. A diverse participant sampling was represented through multiple social media groups, strengthening generalizability.



Consistent support was provided through the project preceptor. Communication with the project preceptor occurred throughout the study and beyond. Through continual feedback by the project preceptor participant engagement quadrupled in the pretest survey. UMKC faculty support offered continual assistance during the IRB process and statistical analysis.

Site administrators in each social media group assisted with the success of the study. During project intervention site administrators boosted participant engagement by assisting with updated post announcements and ensuring project posts remained at the top of their discussion board. Closed loop communication occurred between site administrators and student investigator fostering mutual understanding.

### **Comparing Study Results to Literature**

Study results were compared to existing literature. Niela-Vilén et al. (2016) completed a RCT investigating the effectiveness of an online peer support group with breastfeeding attitude and duration, suggesting an internet based support group positively influences breastfeeding attitude increasing the duration of breastfeeding to three to four months. Wilson (2019) conducted a quasi-experimental design identifying factors that generate sustained exclusive breastfeeding to six months. Results found that SMBSGs had a significantly positive impact on breastfeeding confidence and attitude, reporting a threefold increase (66%) in exclusive breastfeeding to 6 months greater than the U.S. national average (22%; Wilson, 2019).

### **Limitations**

#### **Internal Validity**

Even though evidence links a positive breastfeeding attitude and self-efficacy and prolonged exclusive breastfeeding with SMBSGs, limitations exist. The timeframe between the pre- and posttest survey extended through five months, weakening the attrition rate. A high attrition rate exposed the

study to a weak effect size. Of the 32 participants who completed the pretest survey, only eight completed the post- IIFAS and six completed the post- BSES-SF.

### **External Validity**

Regarding the social media support groups, the credibility and quality of the groups were not explored, suggesting all posts may not be evidence-based. It is with assumption, women who had negative perceptions of online support groups had either left the group or never joined, altering the selection bias. It is assumed that women chose which group to join based on group characteristics and similar sociodemographic. All races and ethnicities were encouraged to participate, however, the sample population consisted only of African American, Hispanic, and white individuals. A convenience sampling increased the homogeneity of the sample.

### **Sustainability of Effects**

Favorable results of this study heighten the recommendation to follow social media breastfeeding support groups. Social media is a rampant phenomenon and the future suggests continual expansion. Through the introduction of new online platforms, opportunities for online breastfeeding social support will continue to flourish. Utilizing active social media groups offers ease of sustainability.

### **Efforts to Minimize Study Limitations**

Invitation across national borders favored a generous sample size with diverse sampling. The online survey allowed participant interaction at their convenience. In comparison to other similar surveys, this study's survey was relatively short, fostering rapid completion. A personalized link was emailed to participants after completion of the pretest survey to foster completion of the posttest survey. A reminder post offered a cue to participants to complete the posttest survey.

A sample size of 34 participants was required for a medium effect size with statistically significant results for a two-tailed paired *t*-test comparing pre- and post- breastfeeding attitude and self-efficacy. A similar sample size was required for a medium effect size with statistically significant results

comparing the relationships between breastfeeding attitude and self-efficacy and exclusive breastfeeding. Only eight participants completed the post- IIFAS and six participants completed the post- BSES-SF, hindering statistically significant results.

### **Interpretation**

#### **Expected and Actual Outcomes**

A moderate sample size was expected as the number of followers in the selected social media groups expanded to over 23,000 members. However, only 32 participants completed the pretest survey. Despite numerous attempts to remind participants to take the posttest survey few completed both surveys. Statistical analysis showed no statistically significant results when comparing breastfeeding attitude and self-efficacy pre and post intervention as well as comparing the relationship between breastfeeding attitude and self-efficacy with exclusive breastfeeding. The extended timeframe between the pre- and posttest survey could reduce participant engagement. The need for breastfeeding support is heightened during the newly postpartum period, increasing engagement on online breastfeeding support groups. As six months postpartum is reached it is assumed that mothers who no longer need breastfeeding support are less engaged on the online support groups. In addition, as mothers reach six months postpartum many have returned to work, again reducing social media engagement.

#### **Intervention Effectiveness**

Involving a project preceptor who has experience with similar research enhances the design and effectiveness of the intervention. Designing a study that mirrors a previously successful intervention strengthens project effectiveness. Utilizing an active social media support group enhances ease of project implementation.

In 2021, Facebook was the most popular social media platform used worldwide (McCormick, 2022). With Facebook being the most popular platform, it would make sense to continue breastfeeding

research on Facebook or similar platforms. Using social media groups with substantial followers heightens engagement and diversifies participant sampling.

### **Intervention Revision**

Having access to participant contact information could promote posttest survey completion. Widening participant age range could enhance generalizability and increase sample size. Reducing the timeframe between pre- and posttest surveys could reduce the attrition rate. In addition, offering an incentive to participants to complete the posttest survey could improve the attrition rate.

### **Expected and Actual Impact to Health System, Costs, and Policy**

Prolonged breastfeeding could save hundreds of thousands of lives each year significantly reducing healthcare costs (HHS, 2011; Victora et al., 2016). Participating in social media breastfeeding support groups is at no cost to the mother and eliminates contact with insurance companies.

Statistically significant results are ideal to implement healthcare policy change.

Estimated costs of the study are without change. The study intervention was at no cost to student investigator or participants. Utilization of the measurement tools and consultation from project preceptor was at no cost to the student investigator. The only additional cost to the student investigator was the printing fee for the project poster being presented at the Midwest Nursing Research Conference. Funding for project dissemination was awarded by the UMKC Women's Health Council, Graduate Assistance Fund. Due to a low-cost budget the ease of project replication is without hindrance.

## **Conclusion**

### **Practical Usefulness of Project**

Online support groups are actively being used for peer led interventions to support breastfeeding (Wagg et al., 2019). Evidence suggests SMBSGs are a supportive resource for breastfeeding women positively influencing breastfeeding exclusivity and longevity (Wilson, 2020). Characteristics of the millennial generation make social media a suitable resource to influence

breastfeeding attitude and self-efficacy. Recommending that pregnant women and new mothers participate in SMBSGs to gain breastfeeding support can be used as a primary care intervention during prenatal and postpartum visits. See Appendix Q for Executive Summary.

### **Further Study of Project**

Social support has a significant impact on mothers' duration of breastfeeding. More research is needed to measure breastfeeding duration and exclusivity with a larger sample size and lower attrition rate. Following social media groups for breastfeeding support is a relatively new phenomenon, further studies are needed for accurate comparison and validity of the results.

### **Dissemination**

After project completion, findings were shared within the approved SMBSGs and appropriate health professionals. The report will be presented to faculty and peers at UMKC with hopes of publication in healthcare journals to ensure adequate dissemination. Student investigator was selected to present at the Midwest Nursing Research Society conference in April 2022. The project manuscript will be submitted to the *MCN, The American Journal of Maternal Child Nursing*. An opportunity is available to present the project at the annual Alaska Breastfeeding Conference in July 2022.

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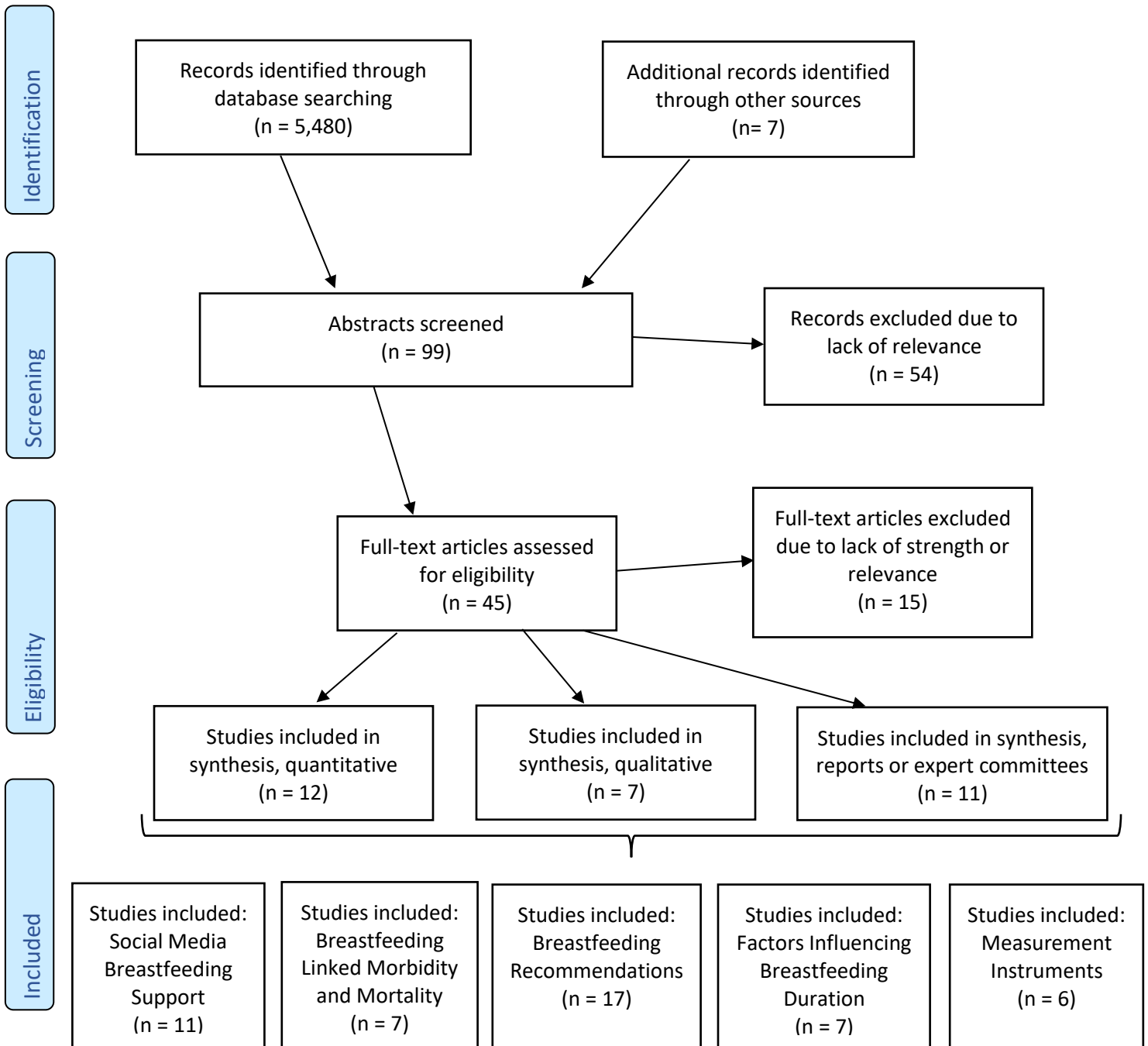
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Appendix A

Adapted PRISMA Flow Diagram



Adapted from Moher, D., Liberati, A., Tetzlaff, J., & Altman, D.G. The PRISMA Group (2009). *Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097*

Appendix B

Synthesis of Evidence Table

Reference	Purpose	Dependent Variable	Independent Variable	Sample & Design	Results & Analysis	Limitations & Usefulness
Theme: Social Media Breastfeeding Support						
Wilson, J. C. (2020). Using social media for breastfeeding support. <i>Nursing for Women's Health, 24</i> (5), 332-343.	To identify factors that generate sustained, exclusive breastfeeding (EBF) to 6 months of age for millennial mothers who breastfeed and participate in SMBSGs	EBF to 6 months	Breastfeeding social support	#: 241 Trait: Breastfeeding women of millennial generation Design: Repeat-measures, longitudinal, mixed-methods	Breastfeeding social support had a significant effect ( $p < .002$ ) on participants' breastfeeding knowledge, confidence, and attitudes. By participation in SMBSG EBF to 6 months was 3 times (66%) greater than U.S. national average (22%).	<p><b>Usefulness:</b> SMBSGs may be a resource for breastfeeding women to increase confidence, knowledge, and attitude to increase duration of exclusive breastfeeding</p> <p><b>Limitations:</b> Time between surveys; attrition; credibility and quality of social media groups</p> <p><b>Notes:</b> Pender's Health Promotion Model</p> <p>Measurement tools: Perceived health-related social support from Facebook measure; Breastfeeding confidence, knowledge, and attitudes measure</p>
		Tool: SEM	Level: III			
Black, R., McLaughlin, M., & Giles, M. (2020). Women's experience of social media breastfeeding support and its impact on extended	To understand the experiences of women using a Facebook SMBSGs and whether it has helped to extend	Self-efficacy and breastfeeding success	Group membership	#: 8 Trait: Primiparous mothers of a private	Participation in social media group increases breastfeeding success and duration of breastfeeding; study highlights the accessibility, especially	<p><b>Usefulness:</b> Social cognitive theory (SCT) can be used to develop interventions aimed at increasing breastfeeding rates and duration</p>
			Level: VI			

<p>breastfeeding success: A social cognitive perspective. <i>British Journal of Health Psychology</i>, 25(3), 754-771.</p>	<p>breastfeeding. Also investigates the value SCT in explaining these experiences.</p>	<p>Tool: 6 step thematic analysis by Braun and Clarke</p>		<p>Facebook group</p>	<p>during nighttime feedings, of social media support groups</p>	<p><b>Limitations:</b> Facebook group for Northern Irish members, mostly white members above age 28</p>
<p>Clapton-Caputo, E., Sweet, L., &amp; Muller, A. (2020). A qualitative study of expectations and experiences of women using a social media support group when exclusively expressing breastmilk to feed their infant. <i>Women and Birth</i>.</p>	<p>To identify expectations and experiences of mothers who access social media groups when exclusively breastfeeding</p>	<p>Exclusive breastfeeding</p>	<p>Online peer support groups</p>	<p>#: 10 Trait: Exclusive breastfeeding women participating in a social media support group</p>	<p>Women who participated in group gained emotional support as well as information and practical support positively impacting exclusive breastfeeding</p>	<p><b>Usefulness:</b> Highlight's importance pre- and post-natal education and support and need for reliable information that impact emotional health <b>Limitations:</b> Only current members of group were interviewed, therefore members with negative experience of group may have already left <b>Notes:</b> Ajzen's 'Theory of Planned Behaviour'</p>
<p>Regan, S. &amp; Brown, A. (2019). Experiences of online breastfeeding support: Support and reassurance versus judgment and misinformation. <i>Maternal and Child Nutrition</i>, 15(4), 1-12. doi: 10.1111/mcn.12874</p>	<p>To explore women's experiences with online breastfeeding support</p>	<p>Breastfeeding duration</p>	<p>Online support</p>	<p>#: 14 Trait: mothers age 18+ with 1-3 children who had or are currently breastfeeding</p>	<p>Online support groups provided a safe space for breastfeeding mothers.</p>	<p><b>Usefulness:</b> online support is available, reassuring, empathetic, and less daunting than face to face <b>Limitations:</b> women with negative experiences on site may have removed themselves therefore ineligible for study. Homogeneous sample of mainly older white British origin mothers</p>

<p>Robinson, A., Lauckner, C., Davis, M., Hall, J., &amp; Anderson, A. K. (2019). Facebook support for breastfeeding mothers: A comparison to offline support and associations with breastfeeding outcomes. <i>Digital health, 5</i>, 2055207619853397.</p>	<p>To identify sources of breastfeeding support for mothers who follow Facebook support groups and to identify support mechanisms to lead to behavioral outcomes among breastfeeding mothers</p>	<p>Behavioral outcomes among breastfeeding mothers</p>	<p>Facebook breastfeeding support groups</p>	<p>#: 277 Trait: African American mothers who are breastfeeding and participating in SMBSG</p>	<p>Facebook support for breastfeeding ranked highest than any other sources of support with support from healthcare providers or LC coming in second. Avg intended duration to breastfeed was 19 months. Breastfeeding self-efficacy and attitude were significant predictors for intended breastfeeding duration.</p>	<p><b>Usefulness:</b> Breastfeeding support is a predictor for breastfeeding duration. Facebook support correlated with intended breastfeeding duration. <b>Limitations:</b> participants could have had other areas of breastfeeding support not mentioned in study <b>Notes:</b> Theory of planned behavior; Measurement tools: NSB, IIFAS, BFSE-SF</p>
<p>Wagg, A. J., Callanan, M. M., &amp; Hassett, A. (2019). Online social media support group use by breastfeeding mothers: A content analysis. <i>Heliyon, 5</i>(3), e01245.</p>	<p>Descriptive analysis of posts made in a breastfeeding support group online</p>	<p>Social support</p>	<p>Online breastfeeding social support group</p>	<p>#: 501 Trait: post made between Nov 01-07, 2016</p>	<p>Informational support was main purpose for use, followed by esteem, then emotional support</p>	<p><b>Usefulness:</b> Online support groups were used as peer led interventions to support breastfeeding. Knowing how the groups are utilized will improve knowledge of the supportive capacity of online peer support. <b>Limitations:</b> many factors influence breastfeeding choices, impact between these factors and the online community is unknown <b>Notes:</b> Social support theory</p>
		<p>Tool: systematic message content analysis</p>	<p>Level: VI</p>	<p>Design: Unobtrusive non-participant design</p>		

Skelton, K. R., Evans, R., LaChenaye, J., Amsbary, J., Wingate, M., & Talbott, L. (2018). Exploring social media group use among breastfeeding mothers: Qualitative analysis. <i>JMIR Pediatrics and Parenting</i> , 1(2).	To investigate maternal attitude and behaviors with social media usage and how they affect breastfeeding outcomes	Behavior and attitude of breastfeeding and duration	Social media group	#: 12 Trait: pregnant women with intention to breastfeed, currently breastfeeding, or recently weaned within last 3 months	Participation in social media groups create a community of support for breastfeeding by normalizing and empowering behavior. Group offered a resource for breastfeeding and shared experiences	<b>Usefulness:</b> Social media groups can positively influence attitude, knowledge, and behavior r/t breastfeeding and lead to longer duration of breastfeeding <b>Limitations:</b> Homogenous sample including higher education white women <b>Notes:</b> Some administrators of group had IBCLC
		Tool: thematic analysis	Level: VI	Design: Single qualitative		
Bridges, N. (2016). The faces of breastfeeding support: Experiences of mothers seeking breastfeeding support online. <i>Breastfeeding Review</i> , 24(1), 11-20.	To better understand mothers' experiences using private Facebook groups associated how mothers find and share breastfeeding support and information from group	Breastfeeding support	Social networking sites	#: 23 Trait: members of 3 private Facebook groups	Main theme was support suggesting social networking sites provide trusted community support. Support is immediate and sites provide practical and valued information.	<b>Usefulness:</b> maternal breastfeeding self-efficacy or confidence in ability to breastfeed, is positively influenced with effective breastfeeding support. Group provided immediate support which was a contributing factor for success of an online community
		Tool: online interviews and semi-structured focus group	Level: VI	Design: online ethnographic approach (netnography)		
Niela-Vilén, H., Axelin, A., Melender, H.L., Löyttyniemi, E., & Salanterä, S. (2016). Breastfeeding preterm infants: A randomized controlled trial of the effectiveness of an internet-based peer-	Investigating whether an online peer support intervention influences the duration of breastfeeding or maternal breastfeeding	Duration of breastfeeding	Closed peer support group on social media	#: 124 Trait: mothers of preterm infants	Duration of overall breastfeeding on avg was 3-4 months in both groups. Breastfeeding favorable attitude and multiparous mothers predicted longer duration of breastfeeding	<b>Usefulness:</b> Results suggest internet-based support intervention positively influenced breastfeeding attitude increasing the duration of breastfeeding in mother of preterm infants
		Tool: Fisher chi-square test, 2 sample t-test (Mann-	Level: II	Design: RCT with		

<p>support group. <i>Journal of Advanced Nursing</i>, 72(10), 2495-2507. doi:10.1111/jan.12993</p>	<p>attitude compared to standard of care</p>	<p>Whitney U-test), Pearson correlation, Cox's proportional hazard model, Kenward-Roger correction</p>		<p>structured interviews</p>		<p><b>Limitations:</b> high number of dropouts, long follow-up <b>Notes:</b> IIFAS and BSES-SF measurement tools</p>
<p>Frazer, C., Hussey, L., Bosch, E. &amp; Squire, M. (2015). Pregnancy apps: A closer look at the implications for childbirth educators. <i>International Journal of Childbirth Education</i>, 30(3), 12-16.</p>	<p>To describe characteristics associated with women of the childbearing age or millennial women and why they turn to apps during pregnancy</p>	<p>Education for a healthy pregnancy</p>	<p>Pregnancy apps</p>	<p>#: N/A Trait: N/A</p>	<p>Been reported that more women than men own smartphones and utilize health apps more than men. Women between the ages of 18 and 35 or born between 1980 to 1997 are referred to as the millennial generation. Millennials have always had instant access to technology. Millennials use technology to gather info enhancing sense of independence.</p>	<p><b>Usefulness:</b> Millennials are proficient at multi-tasking. Social networking sites are large part of millennial's form of communication and ways of discovering information. Millennials prefer texting to phone calls or face-to-face communication. Millennials are familiar with the digital world and how technology enables instant access to information.</p>
		<p>Tool: expert opinion</p>	<p>Level: VII</p>	<p>Design: literature review</p>		
<p>Breastfeeding Linked Morbidity and Mortality</p>						
<p>Center for Disease Control and Prevention [CDC]. (2020a). Breastfeeding.</p>	<p>Benefits for breastfed infants and benefits for mothers</p>	<p>N/A</p>	<p>N/A</p>	<p>#: N/A Trait: N/A</p>	<p>Benefits for infants: asthma, obesity, DM, severe lower resp dx, AOM, SIDS, GI infections, NEC for preemies; mothers: lower BP, DM, reduce risk of breast and ovarian cancer</p>	<p><b>Usefulness:</b> Breastmilk has unmatched benefits for mother and baby; it is the clinical gold standard for infant feeding and nutrition, breastmilk is uniquely tailored to meet the developmental health needs of a growing infant</p>
		<p>Tool: N/A</p>	<p>Level: VII</p>	<p>Design: expert authority</p>		



Danawi, H., Estrada, L., Hasbini, T., & Wilson, D. R. (2016). Health inequalities and breastfeeding in the United States of America. <i>International Journal of Childbirth Education</i> , 31(1), 35-39.	To illustrate variables linked to increased breastfeeding rates and provide information useful to support breastfeeding choices	Breastfeeding rates	Cultural, legal, ethical, and social factors	#: N/A Trait: N/A	Normalizing breastfeeding is essential for the nation's health	<b>Usefulness:</b> need to promote breastfeeding as a preventative measure to reduce morbidity and health disparities for at risk populations
		Tool: N/A	Level: VII			
Victora, C. G., Bahl, R., Barros, A. J. D., Franca, G. V. A., Horton, S., Krasevec, S., Murch, S., Sankar, M. J., Walker, N., & Rollins, N. C. (2016). Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. <i>The Lancet</i> , 387(10017), 475-490.	To examine duration of breastfeeding in low-, middle-, and high-income counties	Duration or initiation of breastfeeding and prevalence of disease	Wealth and education	#: 22 Trait: Breastfed infants and women who are breastfeeding	High-income countries tend to breastfeed for shorter duration than low to middle income countries, however still not at recommended rates. Breastfeeding promotion continues to be important regardless of wealth.	<b>Usefulness:</b> If breastfeeding was near universal level, 823,000 annual deaths in children <5 yrs old and 20,000 annual deaths from breast cancer could be prevented
		Tool: meta-analysis	Level: I			
Breastfeeding Recommendations						
American College of Obstetricians and Gynecologists [ACOG]. (2021). Barriers to breastfeeding: Supporting initiation and continuation of breastfeeding-Committee Opinion No. 821. <i>Obstetrics &amp; Gynecology</i> , 137, e54-62.	Identifies and addresses barriers to breastfeeding	N/A	N/A	#: N/A Trait: N/A	Substantial amount of research and support articles used to create this report. Committee on Health Care for Underserved Women & Breastfeeding Expert Work Group	<b>Usefulness:</b> Provides several case scenarios for providers to relate to their own patient care.

<p>doi: 10.1097/AOG.000000000 0004249</p>		<p>Tool: report of expert committees</p>	<p>Level: VII</p>	<p>Design: Committee Report</p>		
<p>American Academy of Family Physicians [AAFP]. (2020). Breastfeeding, family physicians supporting (position paper).</p>	<p>Recommendation that infants are EBF until 6 months and continued thereafter with appropriate complementary foods for at least one year</p>	<p>N/A</p>	<p>N/A</p>	<p>#: N/A  Trait: N/A</p>	<p>Despite evidence to support BF, growing evidence suggests physicians do not receive adequate training to support BF. Evidence suggests physicians worry that advocating for BF may cause parental guilt. Parents should have the opportunity to be fully educated on the importance of BF to make an informed decision.</p>	<p><b>Usefulness:</b> Evidence demonstrates the importance of BF to 6 months vs 4 months to reduce risk of GI and resp tract infections and otitis media. In developed countries, not breastfeeding is associated with T2D, HTN, CVD, and breast and ovarian cancer. Socioeconomic costs include increased healthcare costs with limited duration of breastfeeding, BF protecting against childhood neglect and abuse, and environmental protection reducing waste and product transportation.</p>
		<p>Tool: committee review</p>	<p>Level: I</p>	<p>Design: Systemic review</p>		
<p>Office of Disease Prevention and Health Promotion [ODPHP]. (2020). Increase the proportion of infants who are breastfed exclusively through age 6 months —</p>	<p>Recommendation statement and target goal for exclusive breastfeeding to 6 months.</p>	<p>N/A</p>	<p>N/A</p>	<p>#: N/A</p>	<p>Breastfeeding is linked to reduced rates of morbidity and mortality for women and children. Exclusive breastfeeding to 6 months of age is linked to health benefits.</p>	<p><b>Usefulness:</b> Strategies including peer support may increase rates of exclusive breastfeeding.</p>
		<p>Tool: Expert opinion</p>	<p>Level: VII</p>	<p>Trait: N/A  Design: Expert opinion</p>		

<p>MICH-15. <i>Healthy People 2030</i>.</p>						
<p>McFadden, A., Gavine, A., Renfrew, M. J., Wade, A., Buchanan, P., Taylor, J. L., Veitch, E., Rennie, A. M., Crowther, S. A., Neiman, S., &amp; MacGillivray, S. (2017). Support for healthy breastfeeding mothers with healthy term babies. <i>The Cochrane database of systematic reviews</i>, 2(2), CD001141.</p>	<p>To identify sources and effectiveness of support for breastfeeding mothers</p>	<p>Duration of breastfeeding  Tool: systematic review</p>	<p>Breastfeeding support  Level: I</p>	<p>#: 73  Trait: breastfeeding women or pregnant women intending to breastfeed; all RCT or quasi RCTs  Design: meta-analysis</p>	<p>Support from non-professionals was associated with an increased duration of exclusive breastfeeding to 6 months compared to support from professionals. Majority of support was face to face contact or telephone contact. More postnatal support is associated with higher rates of exclusive breastfeeding to 6 months. Low/middle income countries showed higher rates of breastfeeding.</p>	<p><b>Usefulness:</b> Breastfeeding support interventions increases the duration of breastfeeding</p>
<p>Duggan, M., Lenhart, A., Lampe, C., &amp; Ellison, N. (2015). Parents and social media. <i>Pew Research Center</i>.</p>	<p>Identifying and documenting various ways parents use social media, specifically through receiving and offering support.</p>	<p>Parental support  Tool: percentages and margin of error</p>	<p>Social media  Level: II</p>	<p>#: 2,003  Trait: adults living in the US  Design: single descriptive quantitative study</p>	<p>Facebook in comparison to other social networking sites is more widely used with moms and younger parents as the most active user of all parents studied. Three quarters of parents use social media for social support and parenting related info. Social media is seen as a source of useful information and a parenting resource.</p>	<p><b>Usefulness:</b> Mothers who use Facebook are more likely to login several times per day compared to dads. Younger parents, &lt; 40 years are more likely to use Facebook daily than older parents. ~82% of parents &lt; 40 yr logon daily vs. 68% of older parents. Above 80% of mothers on social media give and receive support.</p>

<p>Kramer, M. S. &amp; Kakuma, R. (2002). <i>The optimal duration of exclusive breastfeeding: A systemic review</i>. The World Health Organization [WHO].</p>	<p>To review the effects of childhood health, growth, and development, as well as maternal health after exclusive breastfeeding for 6 months versus 3-4 months.</p>	<p>Growth, development, morbidity, and mortality of mothers and infants</p>	<p>EBF to 6 months of age</p>	<p>#: 16 Trait: EBF 4-6 months, EBF 3-7 months, and EBF &gt; 6 months</p>	<p>Infants who EBF show no deficits in weight or length gain from 3-7 months or afterwards. Limited data suggests developing countries with low maternal iron status, with EBF to 6 months of age may require infant iron supplementation to avoid a compromised hematologic status. Advantages of EBF to 6 months of age includes lower risk of infantile GI infections, rapid maternal weight loss, and delayed return of menstrual cycle.</p>	<p><b>Usefulness:</b> No evidence found deficits in growth and development for infants who EBF for 6 months of age. No benefits for introducing foods between 4-6 months of age was reported, except for iron status is one developing country (Honduras). Evidence demonstrates to apparent risk to EBF to 6 months of age in developing and developed countries. <b>Limitations:</b> Longer term trials could demonstrate a larger magnitude of results.</p>
<p>Factors Influencing Breastfeeding Duration</p>						
<p>Ballesta-Castillejos, A., Gómez-Salgado, J., Rodríguez-Almagro, J., Ortiz-Esquinas, I. &amp; Hernandez-Martinez, A. (2020). Factors that influence mothers' prenatal decision to breastfeed in Spain. <i>International Breastfeeding Journal</i>, 15, 97.</p>	<p>Identify factors that influence the decision to breastfeed</p>	<p>Prenatal intent to breastfeed</p>	<p>Socio-demographics, obstetric factors, complications during pregnancy, external influences, and main reason for breastfeeding</p>	<p>#: 5671 Trait: women &gt;19 yrs old, who had 0-5 children, who gave birth between 2013 and 2018</p>	<p>97% of women made decision to initiate breastfeeding prior to birth. Internet influenced 33.7% and midwives influenced 20.1% of women. Attending prenatal classes, multiparous, previous breastfeeding experience, partner support, and having a condition during</p>	<p><b>Usefulness:</b> previous breastfeeding experience and maternal education influence the decision to breastfeed <b>Limitations:</b> selection bias from lack of participants who decided not to breastfeed</p>

		Tool: chi-square analysis, multivariate analysis with binary logistic regression calculating adjusted odds ratio	Level: IV	Design: convenience sample; cross-sectional observational online study	pregnancy affected intent to breastfeed.	
Center for Disease Control and Prevention [CDC]. (2020b). Facts: Key breastfeeding indicators.	Fast facts for breastfeeding women in the U.S.	N/A	N/A	#: N/A	HP 2030 Objectives- rates of breastfeeding vary across geographic regions; breastfeeding disparities exist	<b>Usefulness:</b> AAP and WHO recommend exclusive breastfeeding to 6 months of age; breastfeeding <60% in Kansas
		Tool: expert authority	Level: VII	Trait: N/A		
				Design: N/A		
Cangöl, E. & Şahin. N. H. (2017). The effects of a breastfeeding motivation program maintained during pregnancy on supporting breastfeeding: A randomized control trial. <i>Breastfeeding Medicine</i> , 12(4), 218-226. doi:10.1089/bfm.2016.0190	To increase breastfeeding frequency and duration using a motivational program based on the HPM	Breastfeeding duration and exclusivity	Breastfeeding motivational program	#: 100 Trait: pregnant women	97% of mothers in the motivational group started breastfeeding earlier vs. mothers in the control group and had less problems with breastfeeding. Perceived breastfeeding self-efficacy was significantly higher in the motivational group.	<b>Usefulness:</b> The motivational program was based on the HPM and influenced breastfeeding exclusivity.
		Tool: descriptive test, Pearson's chi-square test, independent samples t test, and ANOVA	Level: II	Design: RCT		
Hussey, L. C. (2016). Impact of health literacy levels in educating	Understanding and assessing health literacy and	Maternal fetal outcomes	Maternal health literacy	#: N/A	Characteristics of the millennial generation make social media a	<b>Usefulness:</b> clinicians should be aware of patient's health literacy

pregnant millennial women. <i>International Journal of Childbirth Education</i> , 31(3), 13-18.	its relationship with pregnant millennial women, maternal-fetal outcomes, medication adherence, and breastfeeding.	Tool: N/A	Level: VII	Trait: millennial women	suitable resource for maternal breastfeeding knowledge and support. Teaching back method is a strategy to evaluate understanding of health education.	and utilize teaching strategies that ensures understanding to maximize its benefits <b>Notes:</b> see table 1 for characteristics of the millennial generation
				Design: expert opinion		
U.S. Preventive Services Task Force [USPSTF]. (2016). Breastfeeding: Primary care interventions.	Recommendation statement based on evidence review to provide interventions during pregnancy and after birth to support breastfeeding	N/A	N/A	#: N/A	The USPSTF recommends peer support for breastfeeding women as a primary care intervention.	<b>Usefulness:</b> Primary Care Interventions to Support Breastfeeding
		Tool: evidence review	Level: I	Trait: N/A		
				Design: Systemic review		
U.S. Department of Health and Human Services [HHS]. (2011). The Surgeon General’s call to action to support breastfeeding. <i>U.S. Department of Health and Human Services, Office of the Surgeon General</i> .	Call to action outlines breastfeeding steps that can be taken to remove some challenges faced by women who want to breastfeed	N/A	N/A	#: N/A	Breastfeeding protects against infections, asthma, obesity, SIDS, maternal cancers. Families can save \$1200-1500/yr, annually US could save \$13 billion. Lack of support.	<b>Usefulness:</b> Health and economic benefits to breastfeeding. Obstacles mothers face. Steps healthcare, employers, community leaders, families & friends, and policymakers can do to promote breastfeeding.
		Tool: N/A	Level: VII	Trait: N/A		
				Design: expert authority		
Meedya, S., Fahy, K., & Kable, A. (2010). Factors that positively influence breastfeeding duration to 6 months: A literature review. <i>Women &amp; Birth</i> , 23, 135-145.	Literature review to identify modifiable factors that positively influence duration of breastfeeding	Breastfeeding duration	Interventional factors based on breastfeeding intention, confidence, and support	#: 10  Trait: breastfeeding, duration, initiation, cessation,	Breastfeeding intention, self-efficacy, and social support are modifiable factors that influence breastfeeding duration	<b>Usefulness:</b> Duration of breastfeeding is reflective by a strong desire to breastfeed for longer timeframe, confidence in ability to breastfeed, and family support.

	to 6 months postpartum.	Tool: Medline, CINAHL, Maternity and Infant Care, and Cochrane Database of systematic reviews	Level: VII	confidence, self-efficacy and Support Design: Literature review		
Measurement Instruments						
Casal, C. S., Lei, A., Young, S. L., & Tuthill, E. L. (2017). A Critical Review of Instruments Measuring Breastfeeding Attitudes, Knowledge, and Social Support. <i>Journal of Human Lactation: Official Journal of International Lactation Consultant Association</i> , 33(1), 21–47.	To critically analyze instruments measuring breastfeeding attitude, knowledge, and social support.	Maternal knowledge, attitude, and social support	Instrument tools	#: 16 Trait: breastfeeding instrument tools	IIFAS: Has been used over 27x. Half of the questions favored formula feeding with other half favoring breastfeeding. Predictive validity demonstrated maternal attitude towards breastfeeding is a predictor for the mother’s choice for method of feeding.	<b>Usefulness:</b> Developed to measure maternal attitude towards breastfeeding with higher scores indicating more positive attitudes towards breastfeeding. <b>Limitations:</b> no theoretical framework associated with instrument
		Tool: Cronbach’s alpha > 0.7	Level: VII	Design: Literature review		
Oh, H. J., Lauckner, C., Boehmer, J., Fewins-Bliss, R., & Lia, K. (2013). Facebooking for health: An examination into the solicitation and effects of health-related social support on social networking sites. <i>Computers in Human Behavior</i> , 29(5), 2072-2080.	Investigating use of online social media sites for health purposes and impact on social support and self-efficacy	Health related social support and self-efficacy	Social networking sites	#: 291 Trait: Undergraduate college students at midwestern university	Emotional support is a significant predictor of health self-efficacy and most prevalent in Facebook context.	<b>Usefulness:</b> Results suggest social media sites can be an effective resource for support and enhance confidence in managing health <b>Limitations:</b> network support was removed d/t poor reliability, this could decrease the ability to compare this study to previous studies. Small sample size <b>Notes:</b> Facebook measurement tool
		Tool: path analysis, SEM	Level: IV	Design: convenience sampling, case control		

<p>Dennis, C. L. (2003). The breastfeeding self-efficacy scale: Psychometric assessment of the short form. <i>JOGNN</i>, 32(6), 734-744. doi: 10.1177/0884217503258459</p>	<p>To reduce the number of items on the original BSES scale by testing the internal consistency, reliability, and validity of the new short form.</p>	<p>Breastfeeding behavior</p>	<p>BSES-SF</p>	<p>#: 491 Trait: breastfeeding mothers</p>	<p>BSES-SF is an excellent measure of breastfeeding self-efficacy. Scale assesses breastfeeding behaviors and cognitions as well as evaluate effectiveness of supportive interventions.</p>	<p><b>Usefulness:</b> Based on psychometric results, BSES-SF is a reliable measurement tool for breastfeeding self-efficacy, <math>p &lt; 0.001</math>. <b>Limitations:</b> Canadian study where new mothers have at least a 6-month maternity leave.</p>
		<p>Tool: Cronbach's alpha coefficient</p>	<p>Level: IV</p>	<p>Design: case-control longitudinal study</p>		
<p>de la Mora, A., Russell D.W., Dungy C.I., Losch M. &amp; Dusdieker L. (1999). The Iowa Infant Feeding Attitude Scale: analysis of reliability and validity. <i>Journal of Applied Social Psychology</i>, 29 (11), 2362–2380.</p>	<p>To test the reliability and validity of the IIFAS scale to measure maternal attitude towards infant feeding.</p>	<p>IIFAS</p>	<p>Attitude and intention to breastfeed</p>	<p>#: study 1- 125 Study 2- 130 Study 3- 763 Trait: postpartum women</p>	<p>IIFAS is a measurement tool measuring attitudes towards infant feeding. Maternal attitudes are strong predictors for feeding method and duration of breastfeeding. Intervention programs aimed to increase rate and duration of breastfeeding may be more successful if influenced maternal attitudes</p>	<p><b>Usefulness:</b> IIFAS was tested and analyzed measuring strong validity and reliability (<math>p &lt; .01</math>) as a measurement tool assessing maternal attitude. Mothers who planned to breastfeed and mothers who stayed at home versus return to work had a more positive attitude toward breastfeeding. <b>Limitations:</b> Most participants were white women of middle-class families.</p>
		<p>Tool: multiple regression analysis, hierarchical regression analysis</p>	<p>Level: IV</p>	<p>Design: case-control study</p>		



## Appendix C

## Evidence Grid

	Theme	Theme	Theme	Theme	Theme
Article	Social Media Breastfeeding Support	Breastfeeding Linked Morbidity and Mortality	Factors Influencing Breastfeeding Duration	Breastfeeding Recommendations	Measurement Instruments
American Academy of Family Physicians (2020)			x	x	
American College of Obstetricians and Gynecologists (2021)			x	x	
Ballesta-Castillejos (2020)			x		
Black (2020)	x		x		
Bridges (2016)	x		x		
Cangöl & Şahin (2017)			x		
Casal (2017)					
Centers for Disease Control and Prevention (2020a)		x		x	
Centers for Disease Control and Prevention (2020b)		x		x	
Clapton-Caputo (2020)	x		x		
Danawi (2016)		x	x		
de la Mora (1999)					X
Dennis (2003)					X
Duggan (2015)	x			x	
Frazer (2015)	x				

	Theme	Theme	Theme	Theme	Theme
Article	Social Media Breastfeeding Support	Breastfeeding Linked Morbidity and Mortality	Factors Influencing Breastfeeding Duration	Breastfeeding Recommendations	Measurement Instruments
Hussey (2016)			x	x	
Kramer (2002)		x		x	
McFadden (2017)			x		
Meedya (2010)			x		
Niela-Vilén (2016)	x		x		x
Office of Disease Prevention and Health Promotion (2020)				x	
Oh (2013)				x	x
Regan (2019)	x		x		
Robinson (2019)	x				x
Skelton (2018)	x		x		
U.S. Department of Health and Human Services (2011)		x		x	
U.S. Preventive Services Task Force (2016)		x		x	
Victoria (2016)		x	x		
Wagg (2019)	x		x		
Wilson (2020)	x		x	x	x
<b>Total</b>	11	7	17	12	6

## Appendix D

### Definition of Terms

**Breastfeeding Attitude-** Attitude is a predisposed state of mind; breastfeeding attitude is expressed through breastfeeding behavior (de la Mora et al., 1999).

**Breastfeeding Exclusivity-** No additional nutrition, be foods or fluid, not even water, except for breastmilk be consumed by the infant for six months of life; however, vitamins, minerals, and medicines in the form of drops or syrup are allowed (WHO, 2021).

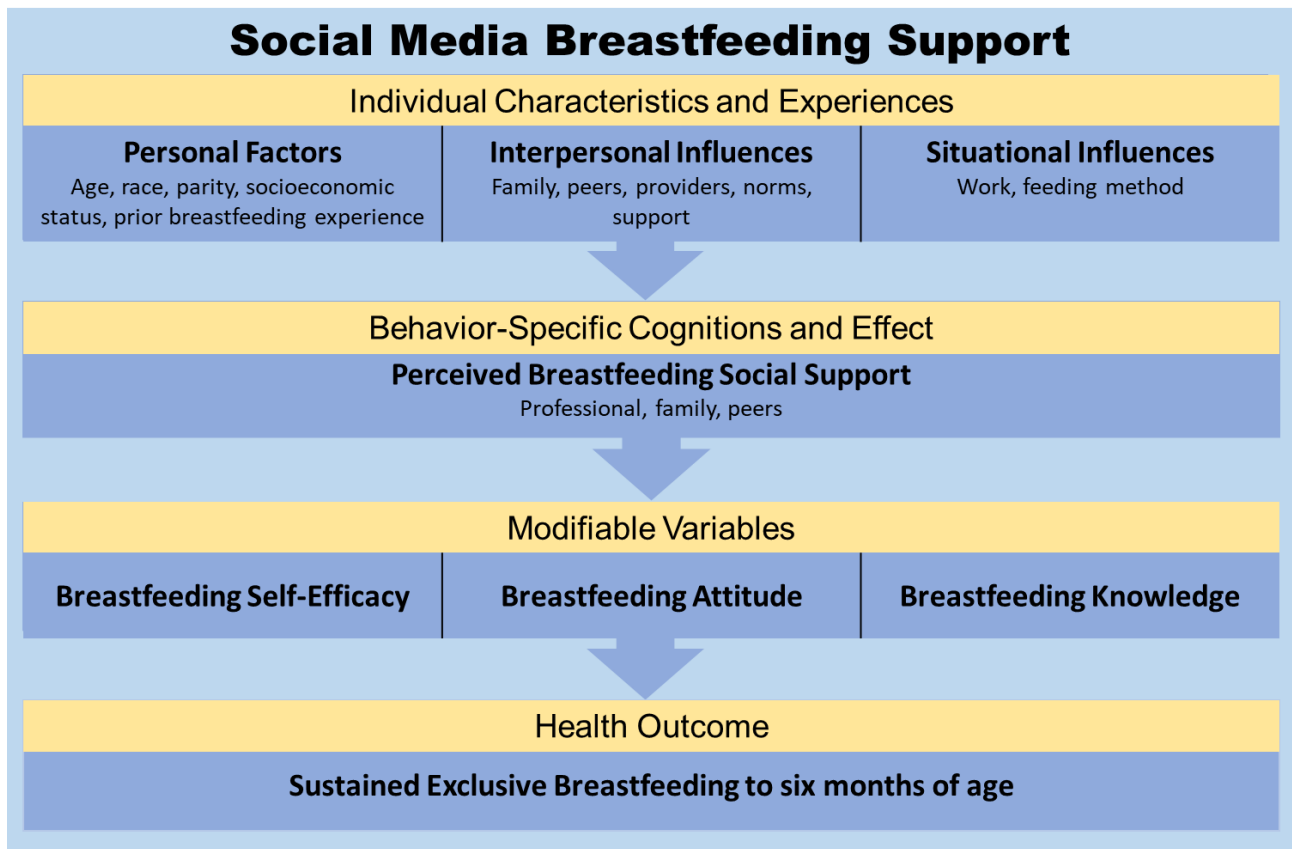
**Breastfeeding Self-Efficacy-** A mother's confidence that she will be able to complete the necessary actions to breastfeed her infant (Robinson et al., 2019).

**Breastfeeding Support-** Any available information and assistance for successful breastfeeding (Robinson et al., 2019).

**Millennial Mothers-** Mothers between the ages of 21 and 40 during project implementation and born between 1980 and 1999 are referred to as the Millennial generation (Wilson, 2020).

**Appendix E**

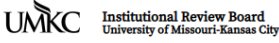
**Theory to Application Diagram**

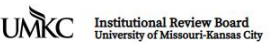
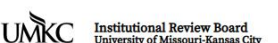


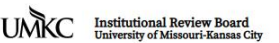
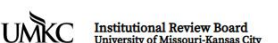
Based on Pender’s (1996) revised Health Promotion Model.

Appendix F

IRB Approval

 <p style="text-align: right; font-size: small;">5319 Rockhill Road Kansas City, MO 64110 816-235-5927 umkcirb@umkc.edu</p> <p>July 14, 2021</p> <p>Principal Investigator: Lyla Jo Lindholm Department: Nursing - General</p> <p>Your IRB Application to project entitled "Breastfeeding Support Through Social Media Groups" was reviewed and determined to qualify for IRB exemption according to the terms and conditions described below:</p> <table border="0" style="width: 100%; font-size: x-small;"> <tr><td>IRB Project Number</td><td>2064022</td></tr> <tr><td>IRB Review Number</td><td>326971</td></tr> <tr><td>Initial Application Approval Date</td><td>July 14, 2021</td></tr> <tr><td>IRB Expiration Date</td><td>N/A Revised Common Rule</td></tr> <tr><td>Level of Review</td><td>Exempt</td></tr> <tr><td>Project Status</td><td>Active - Exempt</td></tr> <tr><td>Exempt Categories</td><td>45 CFR 46.104(d)(2)</td></tr> <tr><td>Risk Level</td><td>Minimal Risk</td></tr> <tr><td>HIPAA Category</td><td>No HIPAA</td></tr> </table> <p><b>Approved Documents</b></p> <ul style="list-style-type: none"> <li>• A five-month posting as a reminder to complete the 6-month surveys.</li> <li>• Exempt Consent and posted invitation announcement</li> <li>• Facebook site approval letters, cost table for project, data collection template, study flow diagram, project timeline flow graphic, logic model, statistical analysis table</li> <li>• Breastfeeding Self-Efficacy Scale-Short Form</li> <li>• Iowa Infant Feeding Attitude Scale</li> </ul> <p>The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the determination:</p> <ol style="list-style-type: none"> <li>1. No subjects may be involved in any study procedure prior to the determination date.</li> <li>2. Changes that may affect the exempt determination must be submitted for confirmation prior to implementation utilizing the Exempt Amendment Form.</li> <li>3. The Annual Exempt Form must be submitted 30 days prior to the determination anniversary date to keep the study active or to close it.</li> <li>4. Maintain all research records for a period of seven years from the project completion date.</li> </ol> <p>If you are offering subject payments and would like more information about research participant payments, please click here to view the UM system Policy on Research Subject Payments: <a href="https://www.umsystem.edu/oei/sharedservices/aps/monpo_vouchers/research_subject_payments">https://www.umsystem.edu/oei/sharedservices/aps/monpo_vouchers/research_subject_payments</a></p>	IRB Project Number	2064022	IRB Review Number	326971	Initial Application Approval Date	July 14, 2021	IRB Expiration Date	N/A Revised Common Rule	Level of Review	Exempt	Project Status	Active - Exempt	Exempt Categories	45 CFR 46.104(d)(2)	Risk Level	Minimal Risk	HIPAA Category	No HIPAA	<p>If you have any questions, please contact the IRB at 816-235-5927 or umkcirb@umkc.edu.</p> <p>Thank you, UMKC Institutional Review Board</p>
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July 6, 2021

UMKC DNP Student: Jordan Cannone

Congratulations. The UMKC Doctor of Nursing Practice (DNP) faculty has approved your DNP project proposal, *Breastfeeding Support Through Social Media Groups*.

You may proceed with IRB application

Sincerely,

A handwritten signature in black ink that reads "Cheri Barber".

Cheri Barber, DNP, RN, PPCNP-BC, FAANP  
Clinical Assistant Professor  
DNP Program Director  
UMKC School of Nursing and Health Studies [barberch@umkc.edu](mailto:barberch@umkc.edu)

A handwritten signature in purple ink that reads "Lyla Lindholm".

Lyla Lindholm, DNP, RN, ACNS-BC  
Clinical Assistant Professor, DNP Faculty  
MSN-DNP Program Coordinator  
UMKC School of Nursing and Health Studies [lindholml@umkc.edu](mailto:lindholml@umkc.edu)

Debbie C. Pankau DNP, APRN, FNP-BC  
Clinical Assistant Professor  
DNP Faculty  
UMKC School of Nursing [pankaud@umkc.edu](mailto:pankaud@umkc.edu)

DNP Faculty Mentor Lyla Lindholm, DNP, RN, ACNS-BC  
UMKC School of Nursing and Health Studies

**UNIVERSITY OF MISSOURI-KANSAS CITY**

2464 Charlotte • Kansas City, MO 64108-2718 • p 816 235-1700 • f 816 235-1701 [www.umkc.edu/nursing](http://www.umkc.edu/nursing) • [nurses@umkc.edu](mailto:nurses@umkc.edu)

## Appendix G

### IRB Approved Information Letter

<p style="text-align: center;"><b>Exempt Consent, Information Letter</b> Research Study: Breastfeeding Support Through Social Media Groups</p> <p>Hello, this is Jordan Cannone. I am a University of Missouri-Kansas City (UMKC) Doctor of Nursing Practice (DNP) student. I am conducting a research project to determine if participation in social media breastfeeding support groups increases exclusive breastfeeding to six months of age and offers positive social support to breastfeeding mothers of the millennial generation, impacting breastfeeding attitude and self-efficacy (self-confidence in breastfeeding).</p> <p>If you choose to be in this project, you will be asked to complete a brief survey that would take about 5 minutes of your time. The total amount of time you would be in this project is six months. During your participation you will be involved in completing two surveys, one at one month postpartum and another at six months postpartum. The surveys will include participant demographics and two measurement scales that measure breastfeeding attitude and self-efficacy.</p> <p>Your participation is entirely voluntary. You can choose to not be in the project or withdraw at any time without penalty. If you withdraw from the project, no data you have submitted will be collected for project purposes other than data needed to track your withdrawal.</p> <p>Your responses will be anonymous; there is no way for the research team to identify you or your responses to the survey. Each participant will create a code to allow pairing of data. The code will not be revealed to the investigators. The code will follow a template that only the participant knows.</p> <p>Do you have any questions about the research study? Please contact Jordan Cannone at <a href="mailto:jck3b@mail.umkc.edu">jck3b@mail.umkc.edu</a>. If you have questions or concerns about your rights as a research participant, you can call the UMKC Research Compliance at 816-235-5927.</p> <p>You must meet the following criteria to be eligible to participate in the project:</p> <ul style="list-style-type: none"> <li>• Primiparous or multiparous women of any sociodemographic backgrounds</li> <li>• English-speaking mother</li> <li>• Born between 1980 and 1999</li> <li>• Within one month postpartum</li> <li>• Exclusively breastfeeding your infant</li> <li>• Women of infants born prematurely who were not treated in the neonatal intensive care unit and who do not have life-threatening conditions</li> </ul> <p>Exclusion criteria includes:</p> <ul style="list-style-type: none"> <li>• Women with infants who have or had life-threatening conditions and premature infants treated in the neonatal intensive care unit</li> <li>• Women who are not exclusively breastfeeding</li> <li>• Women who are not members of one of the approved social media breastfeeding support groups</li> </ul> <p style="font-size: small;">Page 1 of 2 <span style="float: right;">UMKC Exempt Research Information Script Version 1.0</span></p>	<p>If you are eligible and want to participate in this study, click the Agree button to start the survey.</p> <p><b>Note,</b> for the posted Announcement on the Facebook sites, the last one sentence will be replaced with the following: If you are eligible and wish to participate in this study, then click this link, [the REDCap access].</p> <p style="font-size: small;">Page 2 of 2 <span style="float: right;">UMKC Exempt Research Information Script Version 1.0</span></p>
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**Appendix H**  
**Site Approval**

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## Appendix I

### Cost Table for Project

## Budget

Item	Item description	Quantity	Cost
Site participation	Number of approval social media breastfeeding support groups	4	0.00
Measurement Instruments	IIFAS, BSES-SF	2	0.00
Facilitator	Jane C. Wilson, PhD, Palm Beach Atlantic University School of Nursing	1	0.00
Dissemination	Midwest Nursing Research Society Conference presenter fee	1	- 250.00
	Midwest Nursing Research Society student membership	1	- 116.00
	Poster Fee	1	- 75.87
Travel Fees	Round trip airfare	1	- 500.00
	Lodging	3 nights	- 600.00
Funding	UMKC Women's Health Council Graduate Assistance Fund	1	+ 1466.00
<b>Total</b>			<b>\$ 75.87</b>

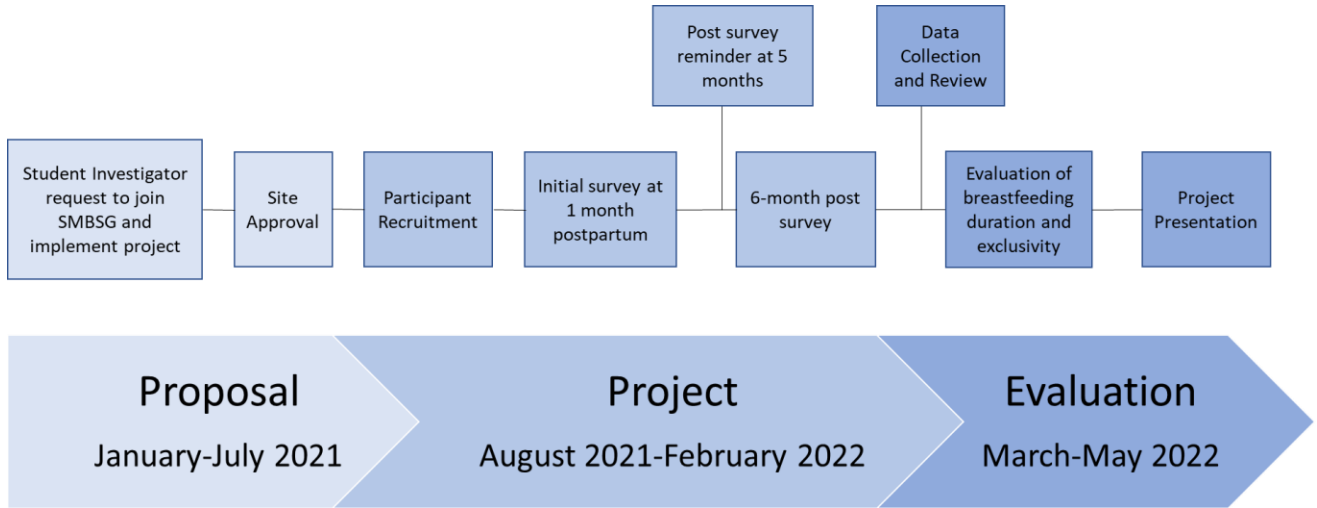
**Appendix J**

**Data Collection Template**

Age	Race/ Ethnicity	Education	Marital Status	Employment	Annual Household Income	Parity	Prenatal Breastfeeding Education	Pre- BSES-SF	Post- BSES-SF	Pre- IIFAS	Post- IIFAS	Exclusive Breastfeeding to 6 Months

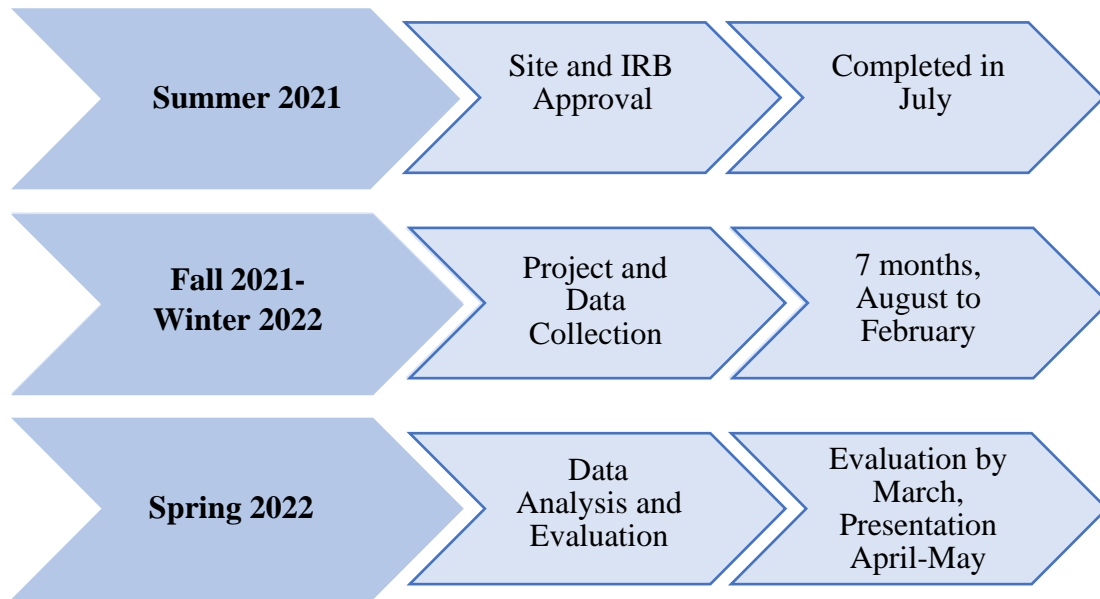
	<b>Exclusive Breastfeeding to 6 Months</b>
<b>6 months</b>	
<b>5 months</b>	
<b>4 months</b>	
<b>3 months</b>	
<b>2 months</b>	
<b>1 month</b>	

**Appendix K**  
**Study Flow Diagram**



**Appendix L**

**Project Timeline Flow Graphic**



Appendix M

Logic Model

Logic Model for DNP Project

**Student:** Jordan Cannone

**Inquiry:** In breastfeeding women born between 1980-1999 who are within one month postpartum and exclusively breastfeeding, does participation in social media breastfeeding support groups (SMBSGs) improve exclusive breastfeeding rates to six months of age compared to the U.S. national average?

Inputs	Intervention(s) Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
<p><b>Evidence Themes</b></p> <ol style="list-style-type: none"> <li>1. Social Media Breastfeeding Support</li> <li>2. Breastfeeding Linked Morbidity and Mortality</li> <li>3. Factors Influencing Breastfeeding Duration</li> <li>4. Breastfeeding Recommendations</li> <li>5. Measurement Instruments</li> </ol> <p><b>Major Facilitators</b></p> <ol style="list-style-type: none"> <li>1. Similar study completed</li> <li>2. Dr. Wilson, PhD PBAU facilitator</li> <li>3. Low-cost</li> <li>4. Minimal provider involvement</li> </ol> <p><b>Major Barriers</b></p> <ol style="list-style-type: none"> <li>1. Length of time</li> <li>2. Attrition rate</li> </ol>	<p><b>EBP Intervention</b></p> <p>Project was implemented over social media investigating whether participation in SMBSGs increases exclusivity and duration of exclusive breastfeeding to 6 months.</p> <p><b>Major steps of the intervention</b></p> <ol style="list-style-type: none"> <li>1. Site and IRB approval</li> <li>2. Participant recruitment</li> <li>3. Consent and pre-survey</li> <li>4. Post-survey</li> <li>5. Data collection and analysis</li> <li>6. Presentation and dissemination</li> </ol>	<p><b>Participants</b></p> <p>Breastfeeding mothers born between 1980-1999 within 1 months postpartum and exclusively breastfeeding who are members of an approved SMBSG.</p> <p><b>Site</b></p> <p>Facebook SMBSGs</p> <p><b>Time Frame</b></p> <p>11 months</p> <p><b>Consent Needed</b> Yes</p> <p><b>Other person collecting data</b> No</p> <p><b>Others consenting</b></p> <p>Yes, site administrators and participants of study</p>	<p><b>Outcomes to be measured during project</b></p> <p><u>Primary:</u> Proportion of infants who are exclusively breastfeed to 6 months</p> <p><u>Secondary:</u> Breastfeeding self-efficacy and attitude</p> <p><b>Measurement tools</b></p> <ol style="list-style-type: none"> <li>1. IIFAS</li> <li>2. BFSE-SF</li> </ol> <p><b>Statistical analysis to be used</b></p> <ol style="list-style-type: none"> <li>1. Paired t-test</li> <li>2. One-way ANOVA</li> <li>3. Percentages</li> <li>4. Descriptive tests: mean, range, SD</li> </ol>	<p><b>Outcomes to be measured beyond project time</b></p> <p><u>Primary:</u> Duration of exclusive breastfeeding between participants and U.S. national average</p> <p><u>Secondary:</u> Perceived support for breastfeeding mothers through participation in SMBSGs</p>	<p><b>Outcomes to be measured in distant future</b></p> <p>Breastfeeding duration and exclusivity between social media groups</p> <p>A comparison of similar studies to validate results.</p>

**Appendix N**

**Measurement Instruments**

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**Appendix O**  
**Permission for Tools**

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**Appendix P**

**Statistical Analysis Table**

One cohort, pre survey (baseline) data and post survey data on BSES-SF and IIFAS, using a paired t-test for analysis. Breastfeeding duration will be obtained post-survey. Breastfeeding duration is measured in percentage with a mean score. Breastfeeding self-efficacy and attitude post intervention will be compared to rates of exclusive breastfeeding to six months in an *F*-ratio. Participant demographics will be displayed in percentages.

	Pre-BSES-SF	Post-BSES-SF	p- value for BSES-SF	Pre-IIFAS	Post-IIFAS	p- value for IIFAS	Exclusive breastfeeding to six months
<b>Cohort data, mean</b>	55.22 (n=32)	56.17 (n=6)	p- value: -.734 df: 5 Sig: .496 95% CI <i>p</i> > .05	51.16 (n=32)	53.5 (n=8)	p- value: -.577 df: 7 Sig: .582 95% CI <i>p</i> > .05	Self-Efficacy F-ratio: (F(2,3) = .026, <i>p</i> > .05) Sig: .975  Attitude F-ratio: (F(2,3) = 2.781, <i>p</i> > .05) Sig: .207
<i>Note.</i> BSES-SF score range 14-70, higher score indicating strong breastfeeding self-efficacy; IIFAS score range 17-85, higher score indicating positive attitude towards breastfeeding							

	1 month	2 months	3 months	4 months	5 months	6 months
<b>Exclusive Breastfeeding Duration</b>	0 %	0 %	17 %	33 %	0 %	50 %

<i>Exclusive Breastfeeding (EBF)</i>	<b>EBF to 3 months</b>	<b>EBF to 6 months</b>
<b>Cohort Group</b>	100 %	50 %
<b>United States National Average 2019</b>	46.9 %	25.6 %

<b>Participant Sociodemographic</b>	<b>Pretest n=32</b>	<b>Posttest n=6</b>
Age in years	Mean: 26 SD: 4.117 Range: 20	Mean: 25.83 SD: 3.971 Range: 11
Race/Ethnicity		
African American	15.6 %	16.7 %
Asian		
Hispanic	6.3	16.7
White	78.1	66.7
Other		
Education		
High school	53.1 %	66.7 %

Undergraduate degree	37.5	16.7
Graduate degree	9.4	16.7
Marital Status		
Married	62.1 %	33.3 %
Not married	37.5	66.7
Employment		
Employed	56.3 %	66.7 %
Not employed	34.4	33.3
Student	9.4	
Annual household income		
<\$29,999	18.8 %	16.7 %
\$30,000-\$99,000	71.9	66.7
>\$100,000	9.4	16.7
Parity		
Primiparous	78.1 %	100 %
Multiparous	21.9	
Prenatal breastfeeding education		
Yes	40.6 %	33.3 %
No	59.4	66.7

## Appendix Q

### Executive Summary

Exclusive breastfeeding for the first six months of age is linked to reduced infant and maternal morbidity and mortality. Rates of exclusive breastfeeding for the first six months of age are less than the target goal by the American Academy of Pediatrics and the World Health Organization. Due to the decline in duration of breastfeeding, Healthy People 2030 set a goal of 42.4% to increase the proportion of infants who are breastfed exclusively through six months of age. Evidence acknowledges that breastfeeding longevity and exclusivity are increased when women receive breastfeeding support. Evidence confirms social media breastfeeding support groups are a means for breastfeeding support.

The purpose of this descriptive research study was to determine if participation in social media breastfeeding support groups increases exclusive breastfeeding to six months of age, improves attitude, and fosters self-efficacy. The sample comprised 32 newly postpartum mothers, born between 1980 and 1999, who are participated in one of four social media breastfeeding support groups. The participants were followed through six months postpartum via social media groups. Breastfeeding attitude and self-efficacy were measured through the Iowa Infant Feeding Attitude Scale and the Breastfeeding Self-Efficacy Scale- Short Form.

Data from pre- and posttest surveys were analyzed using descriptive and inferential statistics. Participating in social media breastfeeding support groups doubled the rate of exclusive breastfeeding to six months compared to the to the U.S. national average in 2019. Breastfeeding attitude and self-efficacy remained consistent suggesting a positive attitude and self-efficacy towards breastfeeding. Evidence suggests social media breastfeeding support groups can be a supportive resource for breastfeeding women, positively influencing breastfeeding exclusivity and longevity. Recommending that pregnant women and new mothers participate in SMBSGs to gain breastfeeding support can be a useful primary care intervention during prenatal and postpartum visits.