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Rochester Institute of Technology

School of Communication

College of Liberal Arts

Breastfeeding Discourse on Social Media

by

Andrea L. Whittemore

 $\label{eq:Athesis} A \ thesis \ \text{submitted}$ in a partial fulfillment of the Master of Science degree in Communication & Media Technologies

Degree awarded:

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BREASTFEEDING DISCOURSE ON SOCIAL MEDIA

5

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College of Liberal Arts

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health organizations.

Degree Awarded: Spring Semester 2019 (2185)

Abstract

Using feminist theory, this study focuses on discourse around breastfeeding on Twitter. Using a mixed-methods approach, I first examine the use of the hashtag #breastfeeding on Twitter to identify the networks driving the discourse. The discourse analysis was completed to explore how feminist principles and mothers' agency were represented in tweets related to breastfeeding. The results, based on (N = 2.818) tweets, show that discourses are seen as breastfeeding as "natural" and "primary," bottle feeding as second best, sexualization versus the natural functions of the breast, breastfeeding as a provocative act, mothering as a public or private nexus, breastfeeding related product placement, breastfeeding as protection for baby or mother, support and education for breastfeeding, breastfeeding as it pertains to insurance, and intersectionality. Also, the network analysis found that the discourse was driven primarily by non-profits and

Keywords: breastfeeding, feminist theory, Twitter, network analysis, discourse analysis

Breastfeeding Discourse on Social Media

In the summer of 2018, two mothers were shamed for breastfeeding their infants at a public pool. Stephanie Buchanan and her sister-in-law, Mary Davis, were at the pool with all their children, when Buchanan's youngest became fussy. She could not leave all her children so she simply lowered one strap of her swimsuit and breastfed her infant. This caused others to become uncomfortable and Buchanan was approached by a lady who asked her to stop because her sons were swimming nearby (Raddatz, 2018). But, it didn't stop there; a staff member requested that Buchanan be more discrete or go to the locker room to breastfeed, and when she refused, the police were called (Campisi & Ahmed, 2018). This all happened in the state of Minnesota, where the law states that "a mother may breastfeed in any location, public or private, where the mother and child are otherwise authorized to be, irrespective of whether the nipple of the mother's breast is uncovered during or incidental to the breastfeeding" (The Office of Revisor of Statutes, 2018). This further emphasizes that legislation is not enough to protect nursing mothers in public, but the principle needs to be socially accepted and respected.

The female breast has been socially constructed as a sexual object, separated from its biological function. The oversexualization of the breast has oppressed mothers' comfort and ability to breastfeed in public spaces. According to Saha (2002), in order to not offend the public, a mother must cover-up to protect passersby from seeing a female breast while nursing. "The exposure of female breasts is so steeped in sexual connotations in modern-day Western society that the good mother has no choice but to arrange her day, her schedule, and the way she breast-feeds such that her breasts are never in view to the public" (p. 66). The female breast is also objectified and sexualized in media including films, music videos, and advertising to sell a product or get viewers' attention, which takes away from its biological function of feeding one's

offspring (Ward, Merriwether, & Caruthers, 2006). Seeing a female breast displayed in a sexual context is socially acceptable and we rarely think twice about it. But, what happens when we see the female breast outside of its sexual role, presented instead as a natural source of nourishment for one's child?

Breastfeeding has been scientifically proven to have crucial health benefits for both the mother and newborn. Breastfeeding can lower the mother's risk of ovarian and breast cancers, as well as lower the newborn's risk of childhood leukemia, obesity, type I and type II diabetes, as well as allergies (Gray, 2013). Yet, with all of these known benefits, many women are not breastfeeding or struggle to keep up with breastfeeding during the newborn's first year of life. The problem with this narrative is that breastfeeding in public has been historically shunned.

Acker (2009) conducted a study to examine the attitudes towards breastfeeding in private versus public. She hypothesizes that breastfeeding in private would be viewed more favorably than breastfeeding in public, and that one's opinion on breastfeeding in public would depend on their knowledge of breastfeeding, their own gender, and sexism. Her results show that women have internalized some of the public's aversion to breastfeeding. The aversions include it is atypical and therefore uncomplimentary, creates dissonance between the biological function of the breasts and their sexual form making it socially unacceptable, and finally that seeing a mother breastfeed in public violates the gender role that women should remain modest. From a feminist perspective, this also undermines a mother's agency and freedom over her body.

Society's struggle with breastfeeding in public can be seen through the legislation controlling when and where a mother can nurse in public, as well as private, spaces. Legislation is what defines and categorizes our behavior (Carter & McCutcheon, 2013). In studying how legislation impacts breastfeeding, researchers found that while some states provide protection

and label breastfeeding as a right, meaning if infringed upon, a breastfeeding mother can sue for violation of her right, others only decriminalize the act and still other states do not provide legislation around breastfeeding (Carter & McCutcheon, 2013). This study concluded that laws do not have a direct effect on the rate at which mothers breastfeed and where they breastfeed. The legislation around breastfeeding has since changed and as of 2018 breastfeeding in any public or private location is permitted and protected by law in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands (Wile, Johnson, & Garcia, 2018).

Given society's conflicting expectations about women and motherhood, social media is a crucial space for women to assert their agency and reject objectification of the female body. Ott (2018) points out how feminists should use social media to advance their beliefs and goals, affirming that they should use the benefits provided through social media such as its openness, collaboration, and networking to encourage participation in discussion (Ott, 2018). The author also encourages diversity and intersectionality on the topic of feminism on social media platforms. It is important for the continuation of feminist movements to be inclusive of diversity and open-mindedness and not disengage or remove oneself at the onset of disagreement (Ott, 2018). The importance of continual research of activity and use of social media platforms, and how they change and evolve over time, is crucial for feminism (Locke, Lawthom, & Lyons, 2018). The authors also encourage better attention to intersectionality for a richer understanding of social media platforms (Locke et al., 2018). By studying how social media platforms are used, and what sentiments are being shared, discourse around the capabilities as well as limitations of such platforms for social use can be discussed and debated.

When using the term breastfeeding, I am referring to the act of providing nourishment via breast milk from the mother's breast to one's offspring. Nursing and breastfeeding may be used interchangeably. Throughout this analysis, mother is in reference to the woman who birthed the baby. For the purpose of this analysis, I use the age limits as follows: according to the World Health Organization, newborn is defined as birth to 28 days of life (2018), infant ranging in age from one month to twelve months, toddler referring to the ages of one year to four years, and child as that beyond four years of age (Purdy, 2017).

Using feminist theory, I explore what Twitter users post about breastfeeding using a mixed-methodology. First, I conduct a social network analysis to identify the voices driving the discourse using #breastfeeding. Next, I apply feminist principles and intersectionality to identify salient discourses in the tweets.

Feminist Theory

Feminist theory is a social scientific theory that provides a framework for analyzing discourse to better understand the role of women in media. It has been categorized into different waves of feminism, starting with the first wave, feminism, which came about during the nineteenth century with focus on political participation and legal rights (Rampton, 2018). The first wave feminist movement claimed success when legislature was passed granting women the right to vote under the nineteenth amendment ratified in 1920 (Rampton, 2018). This wave lost traction around the time of World War II, which took momentum and priority away from the feminist movement (Moynagh & Forestell, 2000). Feminist theory gained attention in the communication context in the 1970s with discussion about women's liberation rhetoric, which led to the second wave of the feminist movement (Campbell, 1973). Second wave feminism focused on public discrimination against women and the eradication of gender stereotypes (Dow,

2014). Postfeminism focuses on "all things female," centering around women's intelligence and confidence (Gill, 2016). This wave accepts the perspective that the feminist movement has succeeded, and the rationale is supported by the argument that women now have more choices and there are now no structural barriers preventing women's success, therefore the feminist movement is no longer relevant (McRobbie, 2007). Postfeminism has been heavily negated, and critics argue that feminism still has a long way to go, resulting in a third wave of feminism (Tully, 2017). This lack of satisfaction with postfeminism gave rise to third wave feminism, which focuses on individuality, contradiction, optimism, and sex-positivity (Tully, 2018). The representation of women identifying with third wave movement are represented as fun, optimistic, and confident by the media (Anderson & Stewart, 2005), however, third wave feminism also focuses on intersectionality, media representation, voice, and eradication of gender roles (Crossley, 2017). In this study, I use the framework of third wave feminism to analyze the discourse around breastfeeding on social media.

Intersectionality was first coined by Kimberle Williams Crenshaw, a black feminist scholar, who addressed the "whiteness" of feminism by incorporating more diversity among race, gender, and sexual orientation (Crenshaw, 1989). This idea of intersectionality is what set the third wave of feminism apart from its previous waves. The goal of third wave feminism is to be inclusive of women with "different ethnicities, abilities, and disabilities, classes, appearance, sexual orientations, and gender identities" (Wood & Fixmer-Oraiz, 2017, p.72). Understanding and being aware of the historical oppression based on the differences just mentioned is crucial for intersectionality as a tenet of third wave feminism.

Many scholars have used feminist theory to analyze communication and media representation of women. For instance, Jackson (2018) uses feminist theory to explore how

young women are using and creating digital feminist media and how their online behavior aligns with their offline feminism. He found that social media is a critical tool for young women to connect with other feminists and have productive discussion around salient feminist issues (Jackson, 2018). Tully (2018) uses feminist theory to analyze a modern feminist character on the hit television show *Bob's Burgers*. Her findings show that the main character, Tina, represents a new wave of feminism – millennial feminism – through her optimism, sex positivity, open construct of her gender identity, and community-mindedness. Similarly, Tully (2017) studies the comedy sketch *Inside Amy Schumer* through the scope of feminist theory finding that Schumer uses her platform to discredit postfeminism by mimicking patriarchal ideas, calling attention to the societal judgement of female bodies, and uses parodies to create incongruity emphasizing that sexist, misogynistic practices still exist.

Feminist theory is relevant for analyzing breastfeeding discourse because of its support for women taking ownership of their bodies. Breastfeeding has been shunned in public because of the societal norms placed on women to be modest and domestic (Crossley, 2017). Again, this shows how the female breast is sexualized and this perception causes women to feel uncomfortable breastfeeding in public, leading them to only breastfeed in private or bottle feed (Van Esterik, 1994). Feminist theory challenges that framework and outlines how women are voicing their opinions and advocating for the value of breastfeeding and not allowing their bodies to be labeled as sexual objects, especially on social media.

McCarter-Spaulding (2008) analyzed the feminist tensions that arise with breastfeeding, and argues that it is "sex-specific, and therefore challenges the feminist principle of gender-neutral childrearing" (p. 207). The author contrasts this perspective by examining the cultural feminist view that warns the dangers of eradicating gender specificity in that it would eliminate

roles that are solely female, and simply encourage women to take on more of the male role. From the cultural feminist lens, breastfeeding is a uniquely feminine behavior and should be valued and protected as such (McCarter-Spaulding, 2008). Another common feminist issue of breastfeeding is the medicalized debate around breast milk, seen as a product delivered to a child, and breastfeeding, the sociocultural process of providing nourishment from mother to child. McCarter-Spaulding (2008) outlines the tensions that arise in the workplace due to these difference in values by arguing that:

In a disembodied approach, only the breast milk is necessary, thus employers need only provide facilities for pumping and storing milk, and time to do so. If the 'embodied' mother needs to be physically present to the infant, and the mother-infant dyad is the focus of lactation, more generous maternity leaves, onsite daycare, and increased job flexibility will be required. (p. 208)

Furthermore, Van Esterik (1994) suggests best practices for feminist advocates to promote breastfeeding including demonstration of how breastfeeding advances co-parenting; a more accurate representation of breastfeeding in media such as magazines, television, and movies; and supporting women's rights to breastfeed politically and through legislation. He articulately concludes that, "any violation of women's right to breastfeed is a violation of women's human rights" (p. S49). This provides an understanding of what is required to advocate for breastfeeding through a feminist theory perspective.

Feminist theory is an appropriate theory to examine social media discourses around breastfeeding as it allows for identification of women's agency, and, also instances of silencing and reinforcement of patriarchal norms. There is a typical focus on the absence of voices on the matter of breastfeeding, but I will use feminist theory to deconstruct discourses on social media.

My study will make a theoretical contribution by applying third wave feminist theory to analyze the discourse around breastfeeding on social media by focusing on salient discourses and social network clusters, rather than focusing on the absence of voice, as many previous studies have done.

Related Studies

There are several studies that have looked at the topic of breastfeeding on social media platforms. Alianmoghaddam, Phibbs, and Benn (2018) interviewed thirty New Zealand mothers, in-person, who were postpartum to understand the support for exclusive breastfeeding on social media. Analysis of the transcripts provided four overarching themes: mothers need reliable online infant feeding information; smartphone apps can be a good option for promoting breastfeeding; information is accessed through weak ties among breastfeeding mothers on Facebook; and the utility of geographically distant infant feeding support via Skype. The study suggested that advocates of breastfeeding should encourage exclusive breastfeeding practice via social media (Alianmoghaddam, Phibbs, & Benn 2018).

Another study by Asiodu, Waters, Dailey, Lee, and Lyndon (2015) surveyed pregnant African American women and support persons and found that participants frequently used social media for social support and to gain knowledge on parenting information, but this information rarely included educational material about infant feeding. The results showed that while social media is a salient tool for education and information for parenting skills, it is lacking in the field of infant feeding and promotion of breastfeeding (Asiodu, Waters, Dailey, Lee, & Lyndon 2015). Continuing with the social media focus, Bridges, Howell, and Schmied (2018) looked at breastfeeding support on social networking sites (SNS), specifically through the Australian Breastfeeding Association (ABA) closed Facebook groups. A content analysis, conducted over a

four-week time span, gathered a total of 778 wall posts, and 2,998 comments posted under the initial 778 wall posts. The findings concluded that the closed Facebook groups provided informational and emotional support facilitated by both trained peer breastfeeding counsellors as well as mothers, and that the administrators played a salient role in making sure the discussions followed the ABA's Code of Ethics (Bridges, Howell, & Schmied, 2018). Supportive environment and positive reinforcement seem to be key for breastfeeding success.

Foss (2017) analyzed breastfeeding videos on YouTube to understand what is displayed when a user searches "breastfeeding," as well as a content analysis of viewer feedback on YouTube videos about breastfeeding. Her findings supported that breastfeeding videos on YouTube are mostly home videos in a narrative style of individual experience, rather than credible, educational content about breastfeeding. Furthermore, Foss proposes that videos should be created by credible organizations in a way that is engaging and informative while being inclusive of different breastfeeding techniques, varying ages of breastfeeding children, as well as mothers of color (Foss, 2017). Gray (2013) examined the issue of online support for breastfeeding through a communication perspective. The researcher used a mixed method analysis of social support communication through online breastfeeding discussion boards. The study concluded that discourse surrounding breastfeeding online could benefit from a stronger understanding of online support and instruction on supportive breastfeeding communication (Gray, 2013). Similarly, Jin, Phua, and Lee (2015) conducted two studies to examine the impact of user-generated content (UGC) and online page popularity via a pro-breastfeeding community Facebook page. The first experiment focused on effects of message style and page popularity, while the second experiment focused on the effects of message valence and page popularity. The findings from both experiments prove that social media is a salient tool for promoting probreastfeeding attitudes (Jin, Phua, & Lee, 2015).

In another study examining breastfeeding posts on social media, Marcon, Bieber, and Azad (2018) analyzed 4,089 images on Instagram as well as 8,331 comments related to breastfeeding through the use of hashtags. The findings of this study showed that Instagram is being used to share breastfeeding related content as well as create support systems and networks for new mothers. These finding also highlighted positive support, with almost no situations of negative discourse surrounding breastfeeding. The study concluded that Instagram is being used to develop supportive networks, and attempts to "normalize" breastfeeding on social media sites (Marcon, Bieber, & Azad, 2018).

Aside from analyzing breastfeeding on social media, other scholars have explored the role of the public opinion in the matters of infant feeding. Kuehl, Drury, and Anderson (2015) analyzed how rhetoric is used to engage the public to become involved in community collaboration regarding public health issues, specifically breastfeeding. The article found that this type of work requires confronting tensions and conflicting ideas of the community, but through the use of strategic communication the current conversational environment could evolve to a more productive public sphere (Kuehl, Drury, & Anderson, 2015). Li, Fridinger, and Grummer-Strawn (2002) conducted a survey to inquire about the public's opinion and understanding of breastfeeding by studying responses from 2,369 participants. Twelve items on the survey were specifically related to breastfeeding, and eight showed positive sentiment. However, their findings for the other four items showed areas of strong concern for the support of breastfeeding mothers. Their findings showed that 45% of respondents believe breastfeeding requires a mother to sacrifice too many lifestyle choices, 31% thought that babies should be

introduced to solid foods by the time they are three months, 31% expressed that one-year-olds should not be breastfed, and lastly, 27% of respondents believe breastfeeding in public to be an embarrassment (Li, Fridinger, & Grummer-Strawn, 2002). This further supports the argument that education about breastfeeding, as well as state legislation protecting breastfeeding in public, must improve in order to reduce the negative stigma around breastfeeding.

Another study by Johnston-Robledo, Wares, Fricker, and Pasek (2007) looked at the attitudes of young females towards breastfeeding and self-objectification. They surveyed two hundred and seventy-five undergraduate female students on topics about future plans to breastfeed, attitudes regarding breastfeeding, apprehensions about breastfeeding, and self-objectification. Findings showed that women with high scores for self-objectification typically viewed public breastfeeding as indecent and embarrassing, and, also predicted breastfeeding to have a negative impact on their body image and sexuality (Johnston-Robledo, Wares, Fricker, & Pasek, 2007). Thomson, Ebisch-Burton, and Flacking (2015) looked at the experiences and opinions of infant feeding from sixty-three women to analyze the presence of shame around their decision to breastfeed or not to breastfeed. The findings show that both breastfeeding and non-breastfeeding mothers experience shame through interactions with healthcare providers and the public which leads the mother to feel excluded, incompetent, and as though she has failed as a mother (Thomson, Ebisch-Burton, & Flacking, 2015). These findings reinforce the notion that women are expected to adhere to modesty standards while being a "good" mother.

Scholars have also sought to understand how breastfeeding is being discussed online through discourse analysis. Foss (2017) examined breastfeeding discourse on YouTube and found that much of the content posted to YouTube is personal accounts of breastfeeding and "at home" videos promoting breastfeeding. Bridges et al. (2018) analyzed breastfeeding discourse

within closed Facebook groups and concluded that informational and emotional support is displayed among closed groups of breastfeeding mothers and ABA administrators. Callaghan and Lazard (2012) investigated public debate forums on a British parenting website to analyze portrayal of infant feeding and choices. The authors conducted a Foucauldian discourse analysis with a feminist lens to see what was being said about infant feeding and found that women were talking about the choice to breastfeed or bottle feed, the role of social and cultural norms in the "choices" of infant feeding, as well as the socially constructed models of "good" or "bad" mothering. The researchers identified five specific discourses around breastfeeding as "natural" and "primary," bottle (or formula) feeding as second best, sexualization versus the natural functions of the breast, breastfeeding as a provocative act, mothering as a public or private nexus (Callaghan & Lazard, 2012). The researchers argue that it is not an individual choice to breastfeed or bottle feed, but rather deep cultural constructs that influence a mother's decision:

The breastfeeding mother is constituted as good against a range of classed, sexualised and de-naturalised alternative others. To fully engage with discursive practices around breastfeeding requires that we think through in complex ways the manner in which it is constituted at the expense of other ways of performing motherhood. (p. 954)

Breastfeeding discourse aligns with feminist discourse on the topics of intersectionality, media representation, and empowerment. Much of what separates the third wave of feminism from its previous waves is the concept of intersectionality, the inclusion of diversity. Third wave feminism embraces women of all "ethnicities, abilities, disabilities, classes, appearances, sexual orientations, and gender identities" (Wood & Fixmer-Oraiz, 2017, p. 72). This embracing of diversity and intersectionality is also a key discourse found in breastfeeding communication (Callaghan & Lazard, 2012; Foss, 2017; Marcon et al., 2018). Empowerment is another key

element to third wave feminism that is consistent with breastfeeding discourse. Women use social media as a platform to own their breastfeeding experiences and empower other women to do the same (Blum, 1993; Foss, 2017; Jackson, 2018; Van Esterik, 1994). This study explores if these trends are still true and if women are using social media to discuss feminist issues around breastfeeding, with a focus on intersectionality and empowerment.

The aforementioned studies outline how breastfeeding on social media is being researched and how the results can be applied to advance the support and advocacy of breastfeeding on social media. Using previous studies as background, I researched the discourses around breastfeeding on Twitter using feminist theory as a lens to understand how social media users talk about an issue that is both a public health and personal issue.

Research Questions

Based on these related studies, my research focused on the following questions:

RQ1: How is the hashtag #breastfeeding used to talk about breastfeeding experiences on social media?

RQ2: What kind of sentiments are shared using the #breastfeeding?

RQ3: How are the tenets of third wave feminism incorporated in the discourse around breastfeeding on Twitter?

Methodology

This study used a mixed-method approach with three-step analysis: network analysis, sentiment analysis, and discourse analysis. I used a netnography approach to my research, which is a "specific set of related data collection, analysis, ethical and representational research practices, where a significant amount of the data collected and participant-observational research conducted originates in and manifests through that data shared freely on the internet, including

mobile applications" (Kozinets, 2015, p. 79). First, a basic analysis was needed to understand who is tweeting, when they are tweeting, and what tweets attract the most attention via retweets. Then the second level of examination was a sentiment analysis to identify positive, negative, and neutral tweets. The third level of inquiry was a discourse analysis to identify what is being said about breastfeeding on Twitter.

Network analysis is a method used to identify relationships and connection patterns between users within a social network (Kozinets, 2015). This method allows researchers to identify the key actors within a network and understand the influence of the main actors on other individuals within the network. In essence, social network analysis "focuses on networks that connect people or social units to one another" (Hansen, Shneiderman, & Smith, 2010, p. 37). This approach was used in my study to gain a better understanding of who is driving the discourse around breastfeeding and what type of accounts are the leading contributors in conversation around breastfeeding, and create an online community.

Sentiment analysis is the process of analyzing one's opinion or attitude expressed in textual form to determine if it is positive, negative, or neutral towards a particular subject, product, or topic (Liu, 2012). Sentiment analysis was important for this study to better understand if the breastfeeding narratives expressed on Twitter were positive, negative, or neutral. Discourse analysis is defined as the critical exploration of "the language associated with a particular social field or practice," in this case, the language associated with breastfeeding (Fairclough, 2010, p. 230). The discourse analysis allowed for a deeper understanding of the messages around breastfeeding as well as sentiment of the messages being shared on social media.

The use of all approaches – network analysis, sentiment analysis, and discourse analysis – are crucial in understanding who is driving the conversation about breastfeeding on Twitter, as well as understanding what is being said about breastfeeding.

The above-mentioned methods are appropriate for studying feminist theory because of the theory's deep roots in critical and cultural studies, which has been adopted by social scientists who typically utilize content analysis approaches to research. Third wave feminism specifically focuses on intersectionality, media representation, voice, and reduction of inequality based on gender roles (Crossley, 2017). Intersectionality is crucial for feminist studies in order to address concerns for all women, not just the issues that affect the majority (Crenshaw, 1989). In applying feminist theory to my research, it was important to keep intersectionality at the forefront of the research as it is one of the most foundational aspects of third wave feminism.

My study explored how individuals are using Twitter as an outlet to express their voices and raise awareness and education about breastfeeding. In conducting this research with a feminist theory lens, I analyzed the data to see if it supported the tenets of third wave feminism such as women making their voices heard on critical issues, and intersectionality. A network analysis is fitting when looking at the topic of breastfeeding through a feminist lens to identify the accounts driving the discourse and shaping the digital community. I used a network analysis in this study to see whether the conversation was being driven by individuals, organizations, or accounts specifically developed to support an issue. Through a network analysis, I was able to identify the key players who were driving the discourse around breastfeeding on Twitter. The discourse and sentiment analyses proved crucial in examining how the discourse around breastfeeding is structured and identifying common feminist themes such as supporting other women on a social platform as well as intersectionality. The method for conducting the discourse

analysis was informed by discourses identified from previous literature (Callaghan & Lazard, 2012). The analysis was conducted by doing a close reading of each individual tweet and comparing the main themes with existing discourses around breastfeeding.

Data Collection

DiscoverText. For my analysis of breastfeeding content on Twitter, I collected data through the DiscoverText software to analyze the discourse around breastfeeding. DiscoverText is a text analytics software developed by Dr. Stuart Shulman to collect complex internet data and explore how the public is sharing their thoughts and analyze discussions ("Text Analytics," n.d.). DiscoverText is helpful in the research process to quickly and efficiently analyze large amounts of text by training machine learning to approach coding the data through a mixture of human and machine coding. Through DiscoverText, I was able to get access to archival breastfeeding data from Twitter. This archive contained 10,618 units from Twitter relating to breastfeeding by tweet content, user bio, hashtag relating to breastfeeding, as well as retweets, comments, and mentions around the topic of breastfeeding. I then applied a filter to show only those units that contained "#breastfeeding" in the tweet and moved those units into a new bucket of 4,474 units. By applying this filter, I recognize that it sets some limitations, and as a result, some relevant data may be missed. There may be tweets pertaining to breastfeeding without using the hashtag or using variations in spelling and punctuation within that hashtag that would eliminate them from my study, but #breastfeeding was the most common and universal tag for sharing breastfeeding discourse.

Once I had a dataset specific to #breastfeeding content, I then began the coding process. I used a binary coding system to code for relevant (1) and not relevant (0) data. The definition used for relevant included all tweets that discussed human breastfeeding. Units coded as not

relevant either used the hashtag but did not actively discuss breastfeeding, used the hashtag as it pertained to animals, or the tweet had since been deleted and therefore not relevant to the current analysis of public tweets. I first went through and coded ten percent of the data, or 447 units, manually. After that, I applied UClassifier a machine learning algorithm, to classify all remaining data based on relevance. This identified 2,431 units, or 54%, as relevant and 2,043 units, or 46%, not relevant. From this, I created a bucket of the relevant data for further analysis. After doing this, I realized there were issues from the machine coding technique. There were 1,707 units that included #breastfeeding and therefore identified as relevant, but upon further analysis, these tweets were about mistreatment of cows in the dairy farming industry. All 1,707 of these tweets also contained #Februdairy and were sorted and coded not relevant based on this unique hashtag. This meant that just over 38% of my relevant bucket was actually not relevant to my study. I also found many deleted tweets that were labeled relevant. Due to these inconsistencies, I decided to sort through the data myself and coded each individual unit manually. Of the 4,474 units, I coded 2,106 (47%) to be relevant and 2,364 (53%) to be irrelevant. While this was much more time consuming, I feel confident in my coding system knowing exactly how each unit was coded.

From this relevant data (n = 2,106), I then completed a sentiment analysis to code for positive, negative, and neutral tweets about breastfeeding. I developed a coding system to identify the tweets as positive (1), neutral (6), or negative (0). Posts that promoted breastfeeding, raised awareness, provided education, recommended a breastfeeding product or clothing item, or shared personal breastfeeding experiences were coded as positive. Posts that simply mentioned breastfeeding without showing positive or negative sentiment, or posts that had been deleted after the relevance coding process were coded as neutral. Finally, posts that passed judgement on

women breastfeeding, or posts advocating against breastfeeding were coded as negative. This sentiment analysis was a crucial step in analyzing the discourse around breastfeeding on Twitter.

The next level of analysis was a discourse analysis to understand the narratives around breastfeeding on social media. I developed a new codebook to analyze the discourse for my dataset. Using categories drawn from previous literature (Callaghan & Lazard, 2012; Foss, 2017), I created a codebook to encompass the discourses of breastfeeding as "natural" and "primary," bottle (or formula) feeding as second best, sexualization versus the natural functions of the breast, breastfeeding as a provocative act, mothering as a public or private nexus, breastfeeding related product placement, breastfeeding as protection for baby or mother, support and education for breastfeeding, and finally, intersectionality. I used this codebook to manually code all (n = 2,106) units of relevant data in DiscoverText.

WebDataRA. The second source of data was collected for the period of May through October of 2018, which was collected using Web Data Research Assistant (WebDataRA); a data capture tool developed by Leslie Carr that can be used on popular social media websites such as Facebook and Twitter to scrape data as the user scrolls through the platform. I went to Twitter and searched all public posts for "#breastfeeding." I then scrolled back in time through the Twitter feed until roughly April 2018. I exported this data into Excel to clean and analyze (*n* = 736) posts collected. This data was then cleaned to include only tweets over a six-month timeframe from May to October 2018, resulting in 712 units for analysis. This was an intentional timeframe selection due to August being National Breastfeeding Awareness Month and wanting to see how people are talking about breastfeeding during this time, as well as three months before and two months after to account for the uptake in breastfeeding related posts.

After analyzing the data in Excel, I imported the dataset into Gephi, a visualization software tool, to complete a network analysis. I adjusted the graph layout using a Forced Atlas algorithm to show the attraction between linked nodes and repulsion of non-linked nodes. From there, I ranked the nodes by degree and set a between centrality measure of 10-50, as well as partitioned by modularity class to apply color emphasis to the clusters. I also entered the cleaned tweets (without emojis) into Voyant Tools to get additional visual analyses of my data. Voyant Tools is a web-based textual analysis tool, created by Stéfan Sinclair and Geoffrey Rockwell, which analyzes sanitized text to show frequency of words, connections between unique terms, as well as trends within word clusters (Sinclair & Rockwell, 2016).

The dataset collected from WebDataRA was uploaded to DiscoverText for coding and further analysis. The codebook developed to code for discourse analysis in the previous dataset was applied to code for discourse of this smaller sample dataset. This allowed for consistency and the ability to determine if my data confirmed or deviated from the discourse findings in previous research.

During the research process, several ethical implications were taken into consideration. Please note that Twitter handles, usernames, and user profile pictures have been removed or blurred beyond recognition for confidentiality. For discussion purposes, I have removed names and assigned letters (A and B) to represent the personal accounts, however I kept the names of corporate and organizational accounts visible. While I only analyzed public tweets, it was a conscious, ethical decision to keep these identifiers confidential in my research due to the understanding that when these tweets were published, the authors of the tweets were unaware of their application and use in this study. Other ethical decisions made during research included how I collected my data and what type of data I analyzed. In using the DiscoverText software, all

tweets are both public and up to date. If a tweet was published with #breastfeeding and later deleted, my dataset would reflect that and mark the tweet as deleted; I therefore coded these as not relevant since they had been deleted.

Results

The tweets for this dataset were collected from an archival system that pulled #breastfeeding tweets from 2007 to 2018. A time analysis feature in DiscoverText graphs the tweets over time and visually shows spikes in use of the hashtag over time (see Appendix A for time graphs of data). There was a spike in frequency of #breastfeeding tweets in 2015 with 2,272 tweets; much of this spike was in relation to the discourse of insurance as it relates to breastfeeding. The new insurance policy mandated that all insurance plans provide support and equipment to breastfeeding mothers, at no additional cost (Jarrett, 2015). Prior to that, the growth in frequency was gradual, starting in 2007 with only two tweets. The year 2016 shows a drop in use of #breastfeeding with only 1,010 tweets, but there is a steady increase from 2016 to 2018 rising to the peak in 2018 of 2,448 tweets. For the data collected via the WebDataRA software, the time graph focuses on the sample of tweets posted from May to October 2018. Most days within this timeframe average about five tweets per day with #breastfeeding. There is a spike on July 8th with twenty-eight tweets followed by twenty-five tweets the following day. The next spike, again with twenty-eight units of data, can be seen on August 1st – the first day of national breastfeeding awareness month. About one week into the month of August and the tweeting frequency returns to its previous pattern of less than ten tweets per day.

A word cloud (see Appendix B, Figure 1 for visual word cloud) was created from the DiscoverText dataset and shows that "breastfeeding" was the most popular and most frequently used term, which makes sense due to the filter applied. Other salient topics included health

benefits, vaccination, breastfeeding equipment, and the topic of breastfeeding for refugee mothers. Measles was a popular topic of discussion from the perspective of breastfeeding with 150 tweets, mostly questioning if the mother's vaccination is passed on to the child through breastfeeding.

Appendix B, Figure 2 shows the word cloud created from the WebDataRA dataset using the Voyant website. It is easy to identify the most popular words and topics being discussed, with the most popular word being breastfeeding. Other popular words in the discourse around breastfeeding include support, health, and mothers.

In analyzing all the hashtags within the dataset, it was verified that #breastfeeding was the most popular hashtag with a total frequency count of 29,787 – including retweets. Other popular hashtags included #WorldBreastfeedingWeek!, #WBW2018, as well as multiple capitalization and punctuation variations of #breastfeeding such as "#Breastfeeding," ""#breastfeeding.," and "#breastfeeding,". In the next section, I present the results by research questions.

RQ1: How is the hashtag breastfeeding used to talk about breastfeeding experiences on social media?

Based on the textual analysis of tweets containing #breastfeeding, Twitter users are taking to social media to create a community for discussion of breastfeeding. The hashtag is used to create awareness of breastfeeding, show support for breastfeeding mothers, educate users on the benefits of breastfeeding, promote breastfeeding products, as well as to share personal experiences, and ask questions about breastfeeding. When analyzing the data, there were five tweets that gained significant attention, accounting for more than 300 units of data (see Appendix C for the top five viral tweets).

Gephi identified 736 nodes and 697 edges creating a directed network graph. Appendix D, Figure 1 shows the Gephi network analysis. From this graph, it is easy to identify the most popular accounts discussing #breastfeeding. There is one orange node in particular that is noticeably larger, meaning more active, than the others and is identified as BfN_UK, the Breastfeeding Network in the United Kingdom. After running a statistical analysis, I identified the network density as 0.001, which means that the network is widespread with few connections between clusters. The modularity range was 0.881, which means this network has distinct clusters, and the average path length was 2.014, meaning there is a distance of two degrees on average between connecting accounts. This analysis shows that the network of accounts covers a wide reach and creates strong ties within clusters of relationships.

RQ2: What kind of sentiments are shared using the #breastfeeding?

It is important to reiterate the definitions of the sentiments used for this research analysis. Positive posts were defined as those that promoted breastfeeding, raised awareness, provided education, recommended a breastfeeding product or clothing item, or shared personal breastfeeding experiences. Posts that simply mentioned breastfeeding without showing positive or negative sentiment, or posts that had been deleted after the relevance coding process, were coded as neutral. Lastly, posts that passed judgement on women breastfeeding, or posts advocating against breastfeeding were coded as negative. Of the 2,106 relevant tweets, 86% were coded as expressing positive sentiment, 7% showed negative sentiment towards breastfeeding, and the remaining 7% were coded as neutral.

Positive sentiment can be seen in tweets such as "Breastfeeding saves lives... The first breast milk – called colostrum – is rich in nutrients and antibodies and acts as a baby's first vaccine, providing a vital shield of protection against disease. #EveryChildALIVE" which

displays a positive attitude toward breastfeeding as well as education about some benefits of breastfeeding (UNICEF Jordan, 2018). An example of negative sentiment can be seen in the tweet "Don't understand how women breastfeed for a year or more. Like if that baby can walk you should not still be breastfeeding?" (Individual A, 2017). Tweets coded neutral included those that had been deleted since data collection, or tweets that showed neither positive nor negative opinions or attitudes towards breastfeeding, such as "That breastfeeding stuff is hard work #houseofthenewborn" (Individual B, 2013). Based on these results, it can be concluded that the majority of discourse around breastfeeding on Twitter is of positive sentiment, aiming to support breastfeeding mothers and share information and resources that advocate for breastfeeding.

RQ3: How are the tenets of third wave feminism incorporated in the discourse around breastfeeding on social media?

To better understand the conversation around breastfeeding on Twitter, I conducted a discourse analysis. Using categories drawn from previous literature, I analyzed the discourses of breastfeeding as "natural" and "primary," bottle (or formula) feeding as second best, sexualization versus the natural functions of the breast, breastfeeding as a provocative act, mothering as a public or private nexus, breastfeeding related product placement, breastfeeding as protection for baby or mother, support and education for breastfeeding, breastfeeding as it pertains to insurance, and finally, intersectionality (Callaghan & Lazard, 2012). A significant number of tweets did not fit these categories of discourse and were coded as not relevant. Table 1 shows the breakdown of the discourse categories and percentages for the DiscoverText dataset.

The same code was applied to the WebDataRA dataset for analysis of the breastfeeding discourse. Building on established research, the data from this sample fit the discourse categories

of breastfeeding as "natural" and "primary," bottle (or formula) feeding as second best, sexualization versus the natural functions of the breast, breastfeeding as a provocative act, mothering as a public or private nexus, breastfeeding related product placement, breastfeeding as protection for baby or mother, support and education for breastfeeding, breastfeeding as it pertains to insurance, and finally, intersectionality (Callaghan & Lazard, 2012). Table 2 shows a breakdown of the discourse codes and percentages. In the following sections, I discuss the four most popular discourses identified in the data and connect them with third wave feminist tenets.

Protection. The DiscoverText data showed the most popular discourse centered around the idea of breastfeeding as protection for either the mother or baby, accounting for 18.28% of the discourse. Examples of this discourse can be seen from both perspectives of protection for baby and protection for mother in the tweets, "Breastfeeding immediately after birth is important because newborns have immature immune systems. This is why #breastfeeding is also called 'the first vaccine" (PAHO/WHO, 2018), as well as "Breastfeeding may lower a woman's risk of heart attack and stroke, a new study shows. #AHANews" (American Heart Assoc, 2017). Based on the data analysis, the Twitter account World Health Organization (WHO) had the most tweets posted with #breastfeeding, making them a driver of breastfeeding content. This account was also the most popular in retweets and mentions, including mentions in retweets. From this, we can take away that the WHO Twitter account is a leader of creating and spreading breastfeeding discourse. Another example of the breastfeeding as protection for baby or mother discourse is seen in the tweet "Breastfeeding champions out there, here are more reasons to advocate for #breastfeeding: #breastmilk protects infants from #antibiotic-resistant #bacteria & improves brain development of premature babies #AMR @BreastfeedingM @1000Days @ZMEScience" (Sanicas, 2018). This tweet, coming from the account of a physician and scientist, promotes the

protective benefits breastfeeding has for one's baby. These tweets also received the most engagement from other users on Twitter.

Support and education. This data sample showed the most popular discourse, accounting for 28.09% of the data, were tweets that showed support or education around breastfeeding. An example of this discourse can be seen as, "No one breastfeeds alone. It takes support from everyone – from parents to policymakers, health facilities, communities and employers. We all have a role to play in supporting #breastfeeding" (1,000 Days, 2018). When judging tweet activity based on replies, one tweet stood out from the rest with an astonishing 466 replies. The tweet, posted by Kraft Brands, read "When it comes to #breastfeeding, you do you. Here's one of our stories" with an accompanying screenshot that read:

I really wanted to breastfeed my daughter, my first and only child, but prior medical issues prevented me from being able to. And I tried! We consulted more than one lactation expert. In the end, formula worked best for my family and I wish I'd never agonized over it at all. My little girl is one today, and she couldn't be cuter, happier, or more loved. –Kraft Marketer and Loving Mom. (Kraft, 2018)

See Appendix E for a visual of the tweet. The message in this tweet is that women hold the power to choose what is best for them and their babies, they have the agency to decide. This aligns with feminist principles that focus on "individualism, choice, and agency" (Gill, 2016, p. 613). The tweet gained significant attention bringing in 603 retweets, 10,224 likes, and 466 replies. It is important to note that Kraft is a formula manufacturer, and while this study is not analyzing the motive behind the tweets, many Twitter users replied to this tweet pointing out that Kraft is simply promoting their own infant formula and profiting from advertising mothers away from breastfeeding. The user response to Kraft's tweet illustrates that while corporations might

co-opt a feminist discourse for product promotion, people are able to distinguish between genuine educational content and informercials.

Intersectionality. Specific discourses around intersectionality, and taking ownership of their breastfeeding experiences were found in the data which aligns with third wave feminist discourse (Crenshaw, 1989). The intersectionality discourse counted for 6.36% of the DiscoverText data and can be seen through the tweets raising awareness and support for refugee mothers as well as Black mothers: "Support Black Breastfeeding #BlackLivesMatter #normalizebreastfeeding #BlackIsBeautiful" (Nourish the Dream, 2015). For the smaller data sample collected through WebDataRA, intersectionality was seen in 3.23% of the data in tweets such as, "African American women have the lowest #breastfeeding rates, despite breastfeeding's economic and nutritional benefits for mom and baby. Read NIMHD Insights to find out how we can address this disparity" (Health Disparities, 2018). Another example of intersectionality can be seen through tweets promoting Black breastfeeding week, "It's black #breastfeeding week! I'll be tweeting all week about supporting our sisters as they feed and bond with their babies #postpartum #maternalhealth" (Williams, 2018). This reiterates the focus on intersectionality and the attention to minority groups and inclusion of diversity as promoted by third wave feminism (Crenshaw, 1989; Locke et al., 2018; Ott, 2018). Engaged social media users recognize that breastfeeding experiences are impacted by a mother's class, race, ethnicity, and education as well. Tweets highlighted challenges mothers faced by minority groups emphasize how social media can be a powerful platform for amplifying challenges of breastfeeding and foster community building. We can see simply from the 2,818 relevant tweets that Twitter is used as a site for individuals to make their voices heard regarding the topic of breastfeeding. It provides a

space for women to share their experiences with breastfeeding, educate one another on the benefits and best practices of breastfeeding, as well as support breastfeeding women.

Discussion

Third wave feminism emphasizes the representation of women as fun, optimistic, and confident by the media (Anderson & Stewart, 2005) while also focusing on intersectionality, media representation, voice, and eradication of gender roles (Crossley, 2017). This can be seen in the current research through analysis of common themes among the tweets. Intersectionality can be seen through emphasis on helping and supporting women of all races, ethnicities, and social classes. The data showed tweets supporting and raising awareness about refugee breastfeeding, which fits under the tenets of intersectionality as well as media representation of third wave feminism, because it highlights how one's economic status and cultural practices might impact motherhood. There is also evidence in support of third wave feminism through media representation and voice (Crossley, 2017). Social media platforms give feminists an avenue to make their voices heard on important issues (Jackson, 2018).

This study looked at the discourse of breastfeeding on social media by examining the hashtag "#breastfeeding" on Twitter using a feminist theory perspective. People are utilizing digital communication to discuss, support, and promote topics of interest, including the awareness, education, and support of breastfeeding. These findings confirm the research of Jackson (2018) that social media is an important resource for users to connect and discuss issues important to them, such as breastfeeding in the case of this research. Van Esterik (1994) suggests best practices for feminist advocates to promote breastfeeding including more accurate representation of breastfeeding in media, and supporting women's rights to breastfeed politically and through legislation. This study shows that individuals are using social media for these exact

purposes by raising awareness on political issues that affect breastfeeding, sharing educational content about breastfeeding, supporting intersectionality, as well as sharing "real life" experiences of breastfeeding so women have more accurate expectations of the challenging task.

The findings from Jin et al. (2015) show that social media is a salient tool for promoting pro-breastfeeding attitudes, which is supported in my findings that Twitter is used for promoting positive sentiment towards breastfeeding. Most of the relevant data was coded as having positive sentiment (86%) and represented a wide range of users from all types of Twitter accounts. There were several "one-off" tweets that displayed positive sentiment but did not attract significant likes, comments, and retweets. Therefore, the tweets of positive sentiment were saturated from organizational Twitter accounts. The most popular tweet from the positive sentiment category with 5,844 likes, 576 comments, and 2,155 retweets was posted by CNN "Australian senator again makes history by giving a speech to Parliament while breastfeeding her child" (CNN, 2017).

The majority of negative sentiment tweets were posted by individual accounts and gained relatively low attention, if any at all, based on likes, comments, and retweets. However, the few tweets of negative sentiment that received high attention through likes, comments, and retweets were typically posted by organizational accounts. An example of this can be seen from the Twitter account of a pro-choice organization who posted, "@realDonaldTrump told a breastfeeding mother she was 'disgusting.' #debatenight #Debates2016" (NARAL, 2016). Overall, ignoring tweet popularity, the most frequent Twitter accounts posting negative sentiment toward breastfeeding, typically in the form of passing judgement or shame, came from individual user accounts and gained little attention.

The findings from this discourse analysis further support previous research in arguing that social media is used to support, educate, and normalize breastfeeding (Alianmoghaddam et al., 2018; Bridges et al., 2018; Jin et al., 2015; Li et al., 2002; Marcon et al., 2018). While social media is an open space for everyone, I expected to see more women using social media as an avenue to own their discourse and control the messages around breastfeeding. However, I found that much of the breastfeeding discourse on Twitter is driven by corporate accounts using social media as an outlet for product promotion, supporting their own financial agendas or non-profit organization missions. An area of future research could be to take on a deeper analysis of those corporate accounts to analyze how they are structuring the conversation of breastfeeding online. According to the discourse analysis, 5.04% of the tweets used #breastfeeding to promote some form of commercial content such as breastfeeding pumps, and clothing targeted toward nursing mothers. The implications of this could be that corporations are dominating the discourse around breastfeeding on social media.

Results from the discourse analysis showed that Twitter is used as a platform to discuss topics of breastfeeding such as support and education, protective benefits, sexualization of breastfeeding, and intersectionality. Of the discourses identified, intersectionality is the main area of overlap between analysis of breastfeeding discourse on social media and tenets of third wave feminism. This focus on intersectionality is what makes the third wave of feminism specifically applicable to this study rather than the previous waves of feminism (Crenshaw, 1989; Crossley, 2017; Wood & Fixmer-Oraiz, 2017). Tenets of third wave feminism are incorporated in the discourse around breastfeeding on social media through intersectionality, media representation, voice, and agency. Twitter users are making a point to emphasize these discourses as significant issues related to breastfeeding.

Based on my findings, which coincide with previous research, I argue that the more social media is used to discuss and encourage breastfeeding, the more mothers will feel supported and motivated to breastfeed. The results also suggest that the more we see breastfeeding content on social media, both textual and visual representations, the more we will become accustomed to it, suggesting that the act of breastfeeding will become more normalized and accepted; and therefore, breastfeeding women will experience less negative judgement from the public, and feel more supported and comfortable in their journey to breastfeed.

Limitations

While this study was conducted with great attention to detail and awareness of research methods, there are some limitations of the study. One limitation of the study is that it only focused on one social media platform, Twitter, which does not allow for a comparison of how breastfeeding is discussed across platforms. Twitter has a specific framework which limits tweets to 240 characters, limiting how much can be shared. Twitter is also a more textual social media platform which means this study did not collect many visual items for analysis. A future study could benefit from using other platforms such as Instagram to examine how images are used in the discourse of breastfeeding. On the methodological level, there are limitations of analyzing data through use of one specific hashtag. As mentioned previously, filtering the data by #breastfeeding excludes all conversation around breastfeeding that does not include that exact hashtag. For example, posts could be shared pertaining to breastfeeding without the use of the hashtag function, or using a variation of the hashtag such as varying capitalization or punctuation. While these are recognized limitations, the scope of this study was to focus on those tweets containing the most popular rendition of the hashtag, #breastfeeding, which allowed for efficient collection and analysis of the desired data.

Future Research

Based on the analysis and findings from this study, areas for future research should look at breastfeeding discourse across multiple platforms of social media, such as a comparison of how the conversations are similar or different on varying platforms and if the platform influences sentiment. Are social media accounts sharing more positive breastfeeding content on Instagram, a more visual platform, as opposed to Twitter, a more textual platform? Are health organizations sharing the same breastfeeding content on multiple platforms, or are they constructing specific messages on each individual platform? Are there common actors across different platforms, or are the accounts driving the discourse specific to each platform? These areas of study would benefit from future research.

References

- 1,000 Days [1000Days]. (2018, October 9). No one breastfeeds alone. It takes support from everyone from parents to policymakers, health facilities, communities and employers.

 We all have a role to play in supporting #breastfeeding [Tweet]. Retrieved from https://twitter.com/1000Days/status/1049679653613576192
- Acker, M. (2009). Breast is best... but not everywhere: Ambivalent sexism and attitudes toward private and public breastfeeding. *Sex Roles*, 61(7-8), 476-490.
- Alianmoghaddam, N., Phibbs, S., & Benn, C. (2018). "I did a lot of googling": A qualitative study of exclusive breastfeeding support through social media. *Women and Birth*. http://doi:10.1016/j.wombi.2018.05.008
- American Heart Assoc [American_Heart]. (2017, June 21). Breastfeeding may lower a woman's risk of heart attack and stroke, a new study shows. #AHANews [Tweet]. Retrieved from https://twitter.com/BrookeCodney/status/877892526799110144
- Anderson, K., & Stewart, J. (2005). Politics and the single woman: The 'Sex and the City voter' in campaign 2004. Rhetoric & Public Affairs, 8(4), 595-616. doi:10.1353/rap.2006.0001
- Asiodu, I. V., Waters, C. M., Dailey, D. E., Lee, K. A., & Lyndon, A. (2015). Breastfeeding and use of social media among first-time African American mothers. *Journal of Obstetric, Gynecologic, and Neonatal Nursing: JOGNN, 44*(2), 268-278.
- Blum, L. M. (1993). Mothers, babies, and breastfeeding in late capitalist America: The shifting contexts of feminist theory. *Feminist Studies*, *19*(2), 291-311.
- Bridges, N., Howell, G., & Schmied, V. (2018). Exploring breastfeeding support on social media. *International Breastfeeding Journal*, 13(1), 1-9. doi:10.1186/s13006-018-0166-9

- Callaghan, J. E. M., & Lazard, L. (2012). 'Please don't put the whole dang thing out there!': A discursive analysis of internet discussions around infant feeding. *Psychology & Health*, 27(8), 938-955. doi:10.1080/08870446.2011.634294
- Campbell, K. K. (1973). The rhetoric of women's liberation: An oxymoron. *Quarterly Journal of Speech*, 59(1), 74-86.
- Campisi, J., & Ahmed, S. (2018, July 24). 2 moms were scolded for breastfeeding at a pool:

 More than a dozen others joined them in protest. Retrieved November 2, 2018, from

 https://www.cnn.com/2018/07/24/health/breastfeeding-moms-pool-protest
 trnd/index.html?no-st=1541164927
- Carter, S. K., & McCutcheon, J. (2013). Discursive constructions of breastfeeding in US state laws. *Women & Health*, 53(4), 419-437.
- CNN [CNN]. (2017, June 22). Australian senator again makes history by giving a speech to Parliament while breastfeeding her child [Tweet]. Retrieved from https://twitter.com/RichardTuffin/status/878740778645766145
- Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *University of Chicago Legal Forum*, 1989(1), 139-167.
- Crossley, A. D. (2017). Finding feminism: Millennial activists and the unfinished gender revolution. New York: New York University Press.
- Dow, B. J. (2014). Watching women's liberation, 1970: Feminism's pivotal year on the network news. Champaign: University of Illinois Press.
- Fairclough, N. (2010). *Critical discourse analysis: The critical study of language* (2nd ed.). London: Routledge.

- Foss, K. A. (2017). "The new boob tube?": education, entertainment, and viewers' perceptions of breastfeeding on social media. In, *Breastfeeding and media: Exploring conflicting discourses that threaten public health* (pp. 189-203). Switzerland: Springer International Publishing AG.
- Gill, R. (2016). Post-postfeminism?: New feminist visibilities in postfeminist times. *Feminist Media Studies*, 16(4), 610–630. doi:10.1080/14680777.2016.1193293
- Gray, J. (2013). Feeding on the web: Online social support in the breastfeeding context.

 Communication Research Reports, 30(1), 1-11. doi:10.1080/08824096.2012.746219
- Hansen, D. L., Shneiderman, B., & Smith, M. A. (2010). "Chapter 3: Social Network Analysis: Measuring, Mapping and Modelling Collections of Connections". In *Analyzing social media networks with NodeXL: Insights from a connected world*. Morgan Kaufmann. pp 12-31.
- Health Disparities [NIMHD]. (2018, August 8). African American women have the lowest #breastfeeding rates, despite breastfeeding's economic and nutritional benefits for mom and baby. Read NIMHD Insights to find out how we can address this disparity [Tweet]. Retrieved from https://twitter.com/NIMHD/status/1027218162155184130
- Individual A [Personal Account]. (2017, July 25). Don't understand how women breastfeed for a year or more. Like if that baby can walk you should not still be breastfeeding? [Tweet].

 Retrieved from https://twitter.com/justlivinman/status/890053890334498816
- Individual B [Personal Account]. (2013, August 14). That breastfeeding stuff is hard work #houseofthenewborn [Tweet]. Retrieved from https://twitter.com/val_0828/status/367615174577897473

- Infant, Newborn. (2018, December 30). Retrieved February 11, 2019, from https://www.who.int/infant-newborn/en/
- Jackson, S. (2018). Young feminists, feminism and digital media. *Feminism & Psychology*, 28(1), 32-49. doi:10.1177/0959353517716952
- Jarrett, V. [vj44]. (2015, November 13). Good news. All health insurance plans must provide breastfeeding support and equipment for the duration at no cost [Tweet]. Retrieved from https://twitter.com/andygaray/status/666281613441929216
- Jin, S. V., Phua, J., & Lee, K. M. (2015). Telling stories about breastfeeding through Facebook:

 The impact of user-generated content (UGC) on pro-breastfeeding attitudes. *Computers in Human Behavior*, 46, 6-17. doi:10.1016/j.chb.2014.12.046
- Johnston-Robledo, I., Wares, S., Fricker, J., & Pasek, L. (2007). Indecent exposure: Self-objectification and young women's attitudes toward breastfeeding. *Sex Roles*, *56*(7-8), 429-437.
- Kent, P [KentPage]. (2018, July 14). #Breastfeeding is a baby's first vaccine v/@unicefturk [Tweet]. Retrieved from https://twitter.com/Fen1231/status/1018211907256270848
- Kraft [KraftBrand]. (2018, September 30). When it comes to #breastfeeding, you do you. Here's one of our stories [Tweet]. Retrieved from https://twitter.com/KraftBrand/status/1046414365765840898
- Kuehl, R. A., Drury, S. A. M., & Anderson, J. (2015). Civic engagement and public health issues: Community support for breastfeeding through rhetoric and health communication collaborations. *Communication Quarterly*, 63(5), 510-515. doi:10.1080/01463373.2015.1103598
- Kozinets, R. V. (2015). Netnography: Redefined. Sage.

- Li, R., Fridinger, F., & Grummer-Strawn, L. (2002). Public perceptions on breastfeeding constraints. *Journal of Human Lactation*, *18*(3), 227–235.
- Liu, B. (2012). Sentiment analysis and opinion mining. *Synthesis lectures on human language technologies*, *5*(1), 1-167.
- Locke, A., Lawthom, R., & Lyons, A. (2018). Social media platforms as complex and contradictory spaces for feminisms: Visibility, opportunity, power, resistance and activism. *Feminism & Psychology*, 28(1), 3-10. doi:10.1177/0959353517753973
- Marcon, A. R., Bieber, M., & Azad, M. B. (2018). Protecting, promoting, and supporting breastfeeding on Instagram. *Maternal & Child Nutrition*, *15*(1), e12658-n/a. doi:10.1111/mcn.12658
- McCarter-Spaulding, D. (2008). Is breastfeeding fair? Tensions in feminist perspectives on breastfeeding and the family. *Journal of Human Lactation*, 24(2), 206-212.
- McRobbie, A. (2007). Postfeminism and popular culture: Bridget Jones and the new gender regime. In Y. Tasker & D. Negra (Eds.), *Interrogating postfeminism: Gender and the politics of popular culture* (pp. 27–39). Durham, NC: Duke University Press.
- Moynagh, M., & Forestell, N. (Eds.). (2000). *Documenting first wave feminisms, volume 1:**Transnational collaborations and crosscurrents. Retrieved November 13, 2018, from https://ebookcentral.proquest.com
- NARAL [NARAL]. (2016, September 26). @realDonaldTrump told a breastfeeding mother she was "disgusting." #debatenight #Debates2016 [Tweet]. Retrieved from https://twitter.com/NARAL/status/780597220945059840

- Nourish the Dream [ntdbfsc]. (2015, July 13). Support black breastfeeding #BlackLivesMatter #normalizebreastfeeding #BlackIsBeautiful [Tweet]. Retrieved from https://twitter.com/ntdbfsc/status/620709630763663360
- Ott, K. (2018). Social media and feminist values: Aligned or maligned? *Frontiers: A Journal of Women Studies*, 39(1), 93-111.
- PAHO/WHO [pahowho]. (2018, July 2). Breastfeeding immediately after birth is important because newborns have immature immune systems. This is why #breastfeeding is also called "the first vaccine" [Tweet]. Retrieved from https://twitter.com/DFHighlands/status/1014996727412248576
- Purdy, E. R. (2017). Infant and toddler development. Retrieved November 13, 2018, from https://www.britannica.com/science/infant-and-toddler-development
- Raddatz, K. (2018, July 20). Breastfeeding moms say Mora pool staff violated law. Retrieved November 2, 2018, from https://minnesota.cbslocal.com/2018/07/20/mora-pool-breastfeeding/
- Rampton, M. (2018, November 28). Four waves of feminism. Retrieved December 4, 2018, from https://www.pacificu.edu/about/media/four-waves-feminism
- Saha, P. (2002). Breastfeeding and sexuality: Professional advice literature from the 1970s to the present. *Health Education & Behavior*, 29(1), 61-72.
- Sanicas, M. [Vaccinologist]. (2018, October 19). Breastfeeding champions out there, here are more reasons to advocate for #breastfeeding: #breastmilk protects infants from #antibiotic-resistant #bacteria & improves brain development of premature babies #AMR @BreastfeedingM @1000Days @ZMEScience [Tweet]. Retrieved from https://twitter.com/Vaccinologist/status/1053200082223296512

- Sinclair, S. & Rockwell, G. (2016). *Voyant Tools*. [Website]. Retrieved from http://voyant-tools.org/
- Text Analytics. (n.d.). Retrieved March 22, 2019, from https://discovertext.com/text-analytics/
- The Office of Revisor of Statutes. (2018). "145.905 Location for breastfeeding." Retrieved from https://www.revisor.mn.gov/statutes/cite/145.905
- Thomson, G., Ebisch-Burton, K., & Flacking, R. (2015). Shame if you do-shame if you don't: Women's experiences of infant feeding. *Maternal & Child Nutrition*, 11(1), 33-46.
- Tully, M. (2017). "Clear eyes, full hearts, don't rape": Subverting postfeminist logics on Inside Amy Schumer. *Women's Studies in Communication*, 40(4), 339. doi:10.1080/07491409.2017.1368763
- Tully, M. (2018). Constructing a feminist icon through erotic friend fiction: Millennial feminism on Bob's Burgers. *Critical Studies in Media Communication*, *35*(2), 194. doi:10.1080/15295036.2017.1398831
- UNICEF Jordan [UNICEFJordan]. (2018, August 16). Breastfeeding saves lives the first breast milk called colostrum is rich in nutrients and antibodies and acts as a baby's first vaccine, providing a vital shield of protection against disease. #EveryChildALIVE [Tweet]. Retrieved from https://twitter.com/UNICEFJordan/status/1030086559134085120
- Van Esterik, P. (1994). Breastfeeding and feminism. *International Journal of Gynecology & Obstetrics*, 47(Supplement), S41-S54.
- Ward, L. M., Merriwether, A., & Caruthers, A. (2006). Breasts are for men: Media, masculinity ideologies, and men's beliefs about women's bodies. *Sex Roles*, *55*(9-10), 703-714.

- Wile, M., Johnson, T., & Garcia, A. (2018). Retrieved November 12, 2018, from http://www.ncsl.org/research/health/breastfeeding-state-laws.aspx
- Williams, A. P. [KPobgyndoc]. (2018, August 26). It's black #breastfeeding week! I'll be tweeting all week about supporting our sisters as they feed and bond with their babies #postpartum #maternalhealth [Tweet]. Retrieved from https://twitter.com/KPobgyndoc/status/1033733404661972992
- Wood, J. & Fixmer-Oraiz, N. (2017). *Gendered lives: Communication, gender, & culture.*Boston: Cengage Learning.

Appendix A

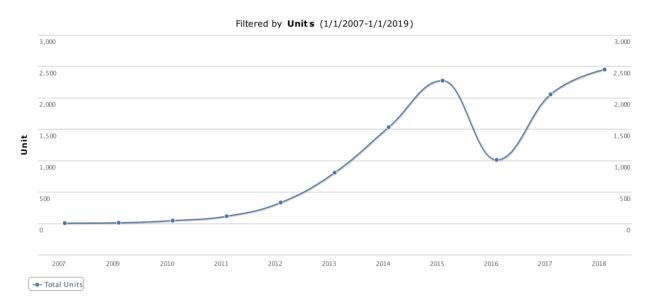


Figure 1. Time graph of tweets collected using the DiscoverText software.

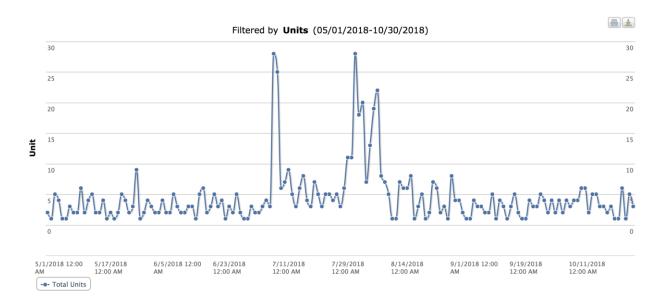


Figure 2. Time graph (created in DiscoverText) of tweets from the May to October, 2018 data sample, collected using the WebDataRA software.

Appendix B



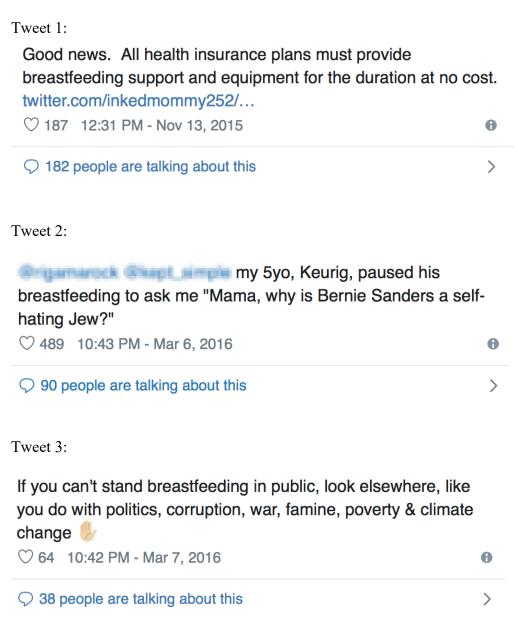
Figure 1. Word cloud of the #breastfeeding data collected using the DiscoverText software.



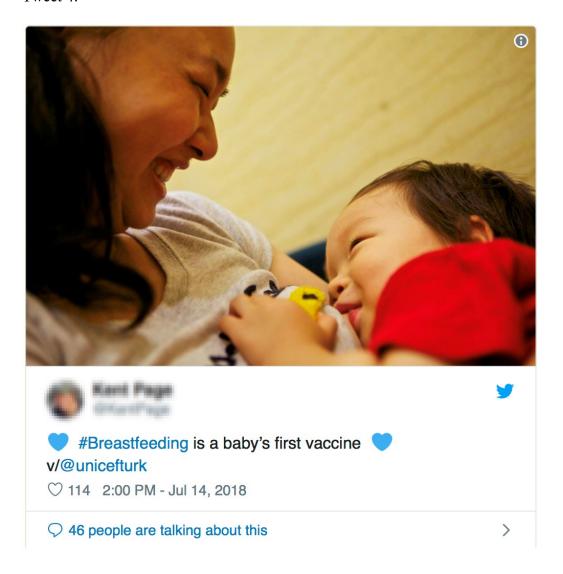
Figure 2. Word cloud created on voyant.com using the #breastfeeding data from the May-October, 2018 data sample.

Appendix C

DiscoverText Top Five Viral Tweets



Tweet 4:



Tweet 5:



Appendix D

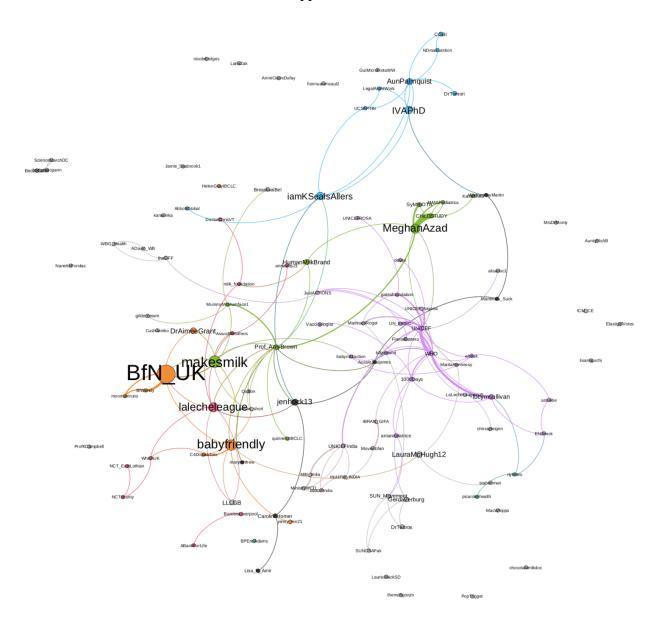


Figure 1. Network analysis of #breastfeeding activity collected via WebDataRA

Appendix E

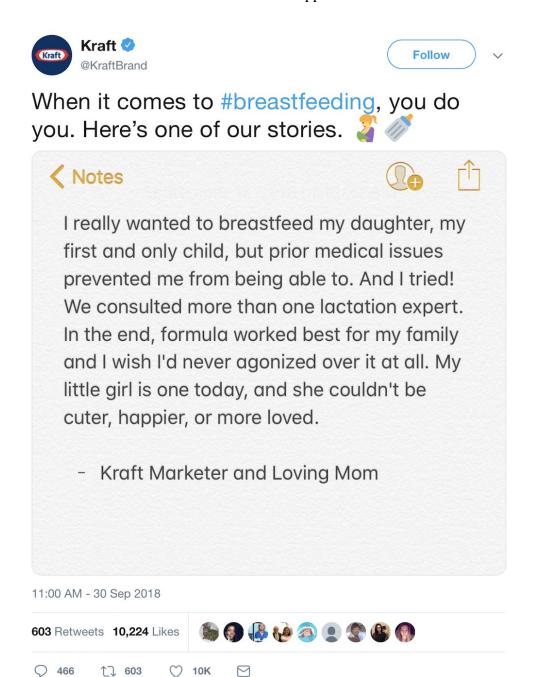


Figure 1. Tweet from WebDataRA dataset with the most replies.

Tables

Table 1

DiscoverText Breastfeeding Discourse

Code	Count	%
Not relevant	959	45.54
Protection	385	18.28
Support and education	185	8.78
Insurance	143	6.79
Intersectionality	134	6.36
Product placement	122	5.79
Exposure (public/private)	103	4.89
"Natural" and "primary"	43	2.04
Sexualization	27	1.28
Bottle as second best	4	0.19
Provocative act	1	0.05

Table 2

WebDataRA Breastfeeding Discourse

Code	Count	%
Not relevant	269	37.78
Support and education	200	28.09
Protection	144	20.22
Exposure (public/private)	25	3.51
Intersectionality	23	3.23
Product placement	20	2.81
"Natural" and "primary"	15	2.11
Bottle as second best	9	1.26
Sexualization	6	0.84
Insurance	1	0.14
Provocative act	0	0.00