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Cover Page Footnote

**please note, per research contract with the acknowledged individuals: Ashleigh Enriquez, Young Suh, Nicole Ellenberger, Marissa Donovan, Louis Marzella, and Katherine Mannion, these individuals MUST be acknowledged in any printing online or otherwise of this paper. See how to below: Amanda E. Hamilton, Department of Communication, University at Buffalo, State University of New York; Moira K. Lewis, Washington, D.C. Amanda E. Hamilton is now at the University at Buffalo, State University of New York, Department of Communication. We thank the following individuals who coded or helped with this study: Ashleigh Enriquez, Young Suh, Nicole Ellenberger, Marissa Donovan, Louis Marzella, and Katherine Mannion. We thank Gary Kreps, Roxanne O'Connell, and Andrew Herman for their help in the development of a research team. We thank Helen (Hua) Wang for her commentary in the preparation of this manuscript. The research reported here does not necessarily reflect the views of the University at Buffalo, State University of New York or Syracuse University. Correspondence concerning this article should be addressed to Amanda E. Hamilton, Department of Communication, University at Buffalo, State University of New York, Buffalo, NY 14228. Email: aehamilt@buffalo.edu

Exclusive Breastfeeding and Breastfeeding in Newspapers: Analysis of Frames, Content, and Valence

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Exclusive breastfeeding and breastfeeding durations in the United States are shorter than recommended. No U.S. media content analyses assess exclusive breastfeeding. No studies assess exclusive breastfeeding or breastfeeding portrayals in U.S. newspapers. Framing theory suggests media present breastfeeding in particular ways and that such presentations impact breastfeeding. We contribute a systematic theoretical approach to the study of exclusive breastfeeding and breastfeeding representations in 819 newspaper articles published across five U.S. regions. This study is limited by its focus on newspapers. However, since exclusive breastfeeding information is identified using a systematic theoretical approach this study contributes new knowledge on the understudied topic of exclusive breastfeeding. Results indicate exclusive breastfeeding is infrequently mentioned. Within articles that mention exclusive breastfeeding, articles published in the West had a wider variety of breastfeeding content. The majority of articles were positively valenced. In the South, reasons not to breastfeed was also a frequent frame. In the West, the frames reasons not to breastfeed and the normalization of breastfeeding were also common and relatively equally frequent. Findings suggest journalists should include more articles about exclusive breastfeeding and fewer articles mentioning reasons not to breastfeed, particularly in the Southern regions where the reasons not to breastfeed frame was not accompanied by relatively equally frequent frames such as the normalization of breastfeeding as it was in the West.

Introduction

How time is spent between mother and child postpartum is critical. How a mother feeds her baby in those first moments and in the months to follow can impact their health. Exclusive breastfeeding (EBF) is the practice of feeding the infant only human milk, vitamins, minerals, and medications; additional solid or liquid foods (e.g., water, juice, or infant cereal) are not fed (WHO, 2013a). Breastfeeding (BF), as the practice is called when the qualifier “exclusive” is not used, describes the practice of feeding the infant human milk and something else; essentially, the infant is not fed solely human milk. Medical organizations including the World Health Organization (WHO), American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and American College of Obstetricians and Gynecologists (ACOG) recommend EBF and BF at specific times postpartum to maintain good health. Nutritional and medical needs drive the type of breastfeeding that is recommended at specific points in time. EBF is recommended for the first six months postpartum. After the first six months postpartum, BF is recommended. Medical professionals encourage BF for as long as is mutually

desired by mother and child. Media play a role in shaping and reflecting notions of EBF and BF.

Breastfeeding in general has been connected to mass media. Indeed, 90.9% of women in a breastfeeding study stated that they would have been encouraged to breastfeed if there was a greater prevalence of information about breastfeeding in mass media (Arora, McJunkin, Wehrer, & Kuhn, 2000). Arora and colleagues' study signified that mass media are critical breastfeeding information sources. However, while the BF content of American magazines and television programming has been analyzed, no research analyzing the BF content in American mass media has assessed portrayals of EBF (Frerichs, Andsager, Campo, Aquilino, & Dyer, 2006; Foss & Southwell, 2006; Foss, 2013). The distinctions between EBF and BF are medically and nutritionally important (AAP, 2012) and should become more incorporated into communication research.

Further, there is no analysis of the EBF or BF content prevalent in American newspapers. Yet, content analyses of breastfeeding portrayals in British, Australian, and Chinese newspapers have been conducted (Henderson, Kitzinger, & Green, 2000; Manniën, McIntyre, & Hiller, 2002; Dodgson, Thompson, Tarrant, & Young, 2008). Therefore, the next study to assess breastfeeding portrayals in American media should examine, at a minimum, how often EBF is mentioned in American newspapers. We address this gap, and in so doing, parse our data according to geographic region within the United States. While we propose neither correlation nor causation between media frame, region, or breastfeeding, in this qualitative research, in organizing data by region we hope to glean differences in the presentations of EBF and BF (if any) between regions. If substantial differences exist, researching the implications of these differences would be an avenue for future research.

Newspapers are relevant sources of information for women (Abdulla, Garrison, Salwen, Driscoll, & Casey, 2002). Abdulla and colleagues (2002) assessed aspects of newspaper credibility in a sample of Americans. Since women predominated in their sample, the findings drawn from the sample are particularly important to us because we are specifically concerned about women and breastfeeding. In their study, newspapers were the most used media. Respondents preferred geographically tailored news, and read newspapers four days per week. Newspapers were a relevant means of gaining information. Further, newspapers were positively rated for being timely, current, and up-to-date. Newspapers were also perceived as trustworthy and credible. Credibility was based on factors such as balanced storytelling, trustworthiness and honesty.

National statistics indicate that while breastfeeding initiation is frequent, it is uncommon to meet recommended durations of EBF and BF in the United States (USHHS, 2013). We argue that EBF portrayals in media are understudied and that content analysis studies should assess for the presence of EBF mentions in newspapers as well as what BF frames accompany articles mentioning EBF as the two practices are related.

The primary purposes of this research are to identify the extent to which EBF is a topic explored in newspaper articles and to identify the type of content (frames) present within articles that mention the EBF frame. Because the valence of media frames within an article contributes to an overall article valence, which in turn, potentially relates to the

processing of EBF information, and perhaps EBF activity, a secondary purpose of this research is to determine the overall valences (e.g., positive, negative, and neutral) of articles that include the EBF frame. As an exploratory study, this research attempts to bring the discussion of EBF into communication research by uncovering the current state and position of EBF in newspapers. To do this we looked for EBF and BF frames and how often they appeared in newspapers. In this sense, we used framing theory loosely to guide the research.

In the next section of this paper, we describe the differences between EBF and BF. By presenting a detailed analysis of the findings of previous research studies that assessed breastfeeding portrayals in foreign and American media we illustrate how our study fills in the gaps in U.S. breastfeeding content analyses. We also briefly discuss framing theory in deference to the guiding hand it played in the current research.

Exclusive Breastfeeding and Breastfeeding

EBF and BF are two of many infant feeding practices performed in the United States. American medical organizations endorse EBF and BF as the ideal infant feeding practices rather than bottle feeding or formula feeding only (AAP, 2012). For the first six months postpartum, the infant's nutritional needs are completely fulfilled by EBF (AAP, 2012; Hambraeus, Forsum, & Lönnerdal, 1975; WHO, 2013a). Indeed, the AAP asserted that EBF should be the normative and reference standard against which all infant feeding practices are measured and assessed in regard to infant health outcomes (AAP, 2005). At around six months postpartum, the developing infant begins to require additional calories to meet his/her developmental and dietary needs. Thus, at around six months, EBF must be supplemented with additional age appropriate foods, as recommended, in order to meet the increasing demands of the growing infant (WHO, 2013a).

Because EBF and BF are recommended separately, at different time periods during the infant's life, and for different reasons, it is important to recognize the distinctions between EBF and BF as well as the impact of EBF and BF at the appropriate times and for the appropriate durations. For example, feeding the infant foods or beverages in addition to human milk prior to six months postpartum can lead to an increased likelihood of premature weaning, which can in turn lead to increased maternal and infant susceptibility to disease. Conversely, in addition to benefits unique to EBF (see Table 1), EBF for six months increases the likelihood that the infant will receive human milk for up to one year, thereby increasing the probability that mothers and children will gain augmented protection from disease and illness (AAP, 2005).

The AAP upholds the EBF and BF recommendations they set in 2005 wherein they recommended that infants be exclusively breastfed for six months and breastfed for six to 12 months with longer durations of BF preferable if continued BF is jointly desired by mother and child (AAP, 2012). The WHO, AAFP, and ACOG support the breastfeeding recommendations of the AAP (AAP, 2012; AAFP, 2013; ACOG, 2013). Table 1 summarizes the benefits associated with each type of feeding practice. The benefits of EBF and BF are dependent on dose and duration (AAP, 2012).

Table 1. *Type of Breastfeeding and Associated Benefits*

EBF	BF
Asthma (reduced occurrences)	Cancers (reduced occurrences) ^a
Atopic dermatitis (reduced occurrences)	Adolescent and adult obesity (reduced occurrences by 30%)
Eczema (reduced occurrences)	GI infection (reduced incidences)
Otitis media (reduced incidences)	Celiac Disease (reduced incidences) ^b
Diabetes Type I and II (reduced incidences)	Childhood inflammatory bowel disease (decreased risk)
Sudden Infant Death Syndrome (reduced incidences)	Cardiovascular disease, hypertension, diabetes, hyperlipidemia ^c
Infants experience fewer colds and infection	Rheumatoid arthritis ^c
Hospitalization due to infection (reduced risk)	
Postpartum maternal weight loss (increased)	

Note. This data is taken from an executive summary released by the AAP (2012); (a) occurrences of cancer are reduced for mother and child; (b) human milk should be given at the time of gluten exposure to reduce risk for Celiac Disease; (c) longer lifetime cumulative duration of lactation is positively related to protection against these conditions/diseases.

The 2013 breastfeeding report card released by the Centers for Disease Control provided the EBF and BF rates at various times postpartum in each of the 50 states (USHHS, 2013). In our analysis, we group these states by region and further condense breastfeeding statistics. Although the overall national rate of BF adoption has risen, it is problematic that there remains a high prevalence of short durations of EBF and BF. The report card revealed that 76.5% of infants were breastfed at least some human milk in the United States. However, actual durations of EBF and BF indicate a high prevalence for not meeting recommended durations. Nationally 16.4% of infants were exclusively breastfed for the full 6 months postpartum, and 27% infants were breastfed for 12 months postpartum (USHHS, 2013). Table 2 indicates the percentage not meeting recommended durations.

Table 2. *Percentage of Infants Not EBF or BF to Recommended Duration*

	Northeast	Midwest	West	South	South Central
U.S. States	ME, NH, VT, MA, RI, CT, NY, PA, NJ	WI, MI, IL, IN, OH, MO, ND, SD, NE, KS, MN	ID, MT, WY, NV, UT, CO, AZ, NM, AL, WA, OR, CA, HI	DE, MD, DC, VA, NC, SC, GA, FL	KY, TN, MS, AL, OK, TX, AR, LA
Not EBF for 6 mo.	81.1	82.4	77.6	86.6	89.2
Not BF for 1 yr.	71.9	76.1	66.4	77.5	84.0

Note. This data is taken from the 2013 United States Breastfeeding Report Card; percentages represent the average regional percentage which was determined using the percentage reported for each state in the region.

Not meeting recommended durations of EBF and BF is not a singularly U.S. challenge. Results from national surveys conducted by the WHO between 2005 and 2010 indicate that in 24 out of 36 countries in the European Region, only half of the children in each of

the 24 countries were EBF for three months postpartum. Three months of EBF is half the recommended duration for EBF (WHO, 2013b).

Currently, no content analyses assess EBF portrayals. Since, nationally 16.4% of infants meet EBF recommendations in the U.S., and EBF is the normative standard against which all infant health outcomes are measured, bringing EBF into discussion in communication research has many implications. With no newspaper content analyses on BF portrayals in the U.S., newspapers afford an opportunity to contribute new knowledge of EBF portrayals as well as expand our knowledge of BF portrayals in American media.

Newspaper Content Analyses of Breastfeeding Portrayals

Studies assessing breastfeeding portrayals in British, Chinese, and Australian newspapers examined different aspects of BF portrayals. In a British newspaper sample, 38 mentions of breast or bottle feeding, visual or verbal, prevailed (Henderson, Kitzinger, & Green, 2000). These mentions were categorized by type; specifically, whether the mention was referenced as part of a report or feature article about a separate issue (n=35), referenced as part of a problem (n=15), or whether problems were referenced alongside their solutions (n=9). Few British newspaper articles mentioned solutions to feeding challenges. Chinese newspapers, conversely, tended to offer solutions to breastfeeding problems when problems were referenced. Breastfeeding was featured as the main topic in these newspapers. Local organizations accounted for about half of the breastfeeding mentions (Dodgson, Thompson, Tarrant, & Young, 2008).

In Australian newspapers a small number of articles about breastfeeding were letters to the editor. Merely, 1.3% of articles featured photos of an infant breastfeeding. More than half the articles sampled (55%) claimed that breastfeeding in public is the most common issue with breastfeeding. This led the authors to conclude that “breastfeeding is an emotive issue and could be more actively supported and promoted by publishing more newspaper articles that present a positive message of breastfeeding, more positive headlines, and more breastfeeding photos” (Manniën, McIntyre, & Hiller, 2002, p. 5).

Further exploring content analyses of infant feeding, a qualitative analysis of breastfeeding depictions, both verbal and visual, in prime time fictional television programming was recently conducted (Foss, 2013). Seven thematic categories describe the BF depictions of Foss’ (2013) sample: “the breastfeeding woman,” “learning to breastfeed,” “the benefits of breastfeeding,” “breastfeeding obstacles,” “breastfeeding a private activity,” “sexualizing the breast,” and “breastfeeding as deviant, socially unacceptable, or harmful” (pp. 332–336). The breastfeeding woman was depicted as “professional, affluent, well educated, and usually Caucasian” (p. 332). Learning to breastfeed encompassed mainly Caucasian, educated and professional characters. These characters expressed uncertainty about breastfeeding, but were guided by an expert, who provided help and reassuring advice. Further, the benefits of breastfeeding were not often given as reasons to breastfeed. Challenges associated with breastfeeding were also limited in portrayal. Women’s public nursing was criticized in six portrayals. And, acceptable breastfeeding was characterized as “mothers breastfed[ing] their new babies covered up in their home” (Foss, 2013, p 335). This analysis of breastfeeding depictions provides a detailed set of

images about breastfeeding. Categorizing the depictions by themes contributed to an understanding of how breastfeeding is portrayed in television shows in the United States.

The presence of research on media portrayals of breastfeeding in media stresses the relevance of infant feeding as an important public health topic. However, in our review of British, Chinese, and Australian newspaper content analyses, and our review of American television analyses, we found no data on EBF; the normative and recommended standard of infant feeding for the first six months. And, with no analysis of American newspapers, it is unknown how, and how often, newspapers within the United States mention EBF.

EBF is the first feeding practice encouraged after birth, yet it is not a common practice. Media is capable of shaping and reflecting societal topics, notions, and values. Consequently, it is fruitful for future work in public health and health communication, to understand how, and how often, EBF is mentioned in a sample of American newspapers. Since geographically tailored newspapers are a preferred means for obtaining information (Abdulla, Garrison, Salwen, Driscoll, & Casey, 2002), focusing our analysis on such types of newspapers has additional importance. To acquire an understanding of how, and how often, EBF is mentioned, we asked:

RQ 1) What is the ratio of the number of articles featuring EBF to total number of articles published, in each region, and what is the ratio of articles featuring EBF to articles featuring BF recommendations, in each region, in our sample of articles?

RQ 2) What type of content is contained in articles that include mention of EBF?

RQ3) What is the overall valence of articles published in each region that include mention of EBF?

Concepts were categorized using the concepts of frames; the EBF frame and BF frames are described in the methods section.

Frames and Framing Theory

Framing theory describes a set of theoretical propositions that explain the role of mass media in the social construction of social phenomenon. Theoretical propositions within framing theory vary across social science disciplines. Bateson (1972) described a frame as a set of interrelated messages. Gitlin (1980) defined frames as salient and pervasive patterns of cognition, interpretation, and presentation. He argued that frames allow recipients of media to make sense of the world. Entman (1993) furthered our understanding of frames and framing when he explained that communicators “select some aspect of perceived reality and make [it] more salient in a communicating text, in such a way as to produce a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (p. 52).

In his paper on framing as a theory of media effects, Scheufele (1999) argued that frames should be treated as either dependent or independent variables. Scheufele suggested that studies assessing frames as a dependent variable examine the role of myriad factors that influence the creation of frames. For example, at the audience level, analysis of frames as

a dependent variable would involve studying frames as outcomes of the way mass media framed an issue (Price, Tewksbury, & Powers, 1996).

Given our primary purposes and aim to bring EBF into the conversation within the discipline of health communication, we used framing theory loosely, as a guide for understanding the role of media and content presented in media regarding EBF and BF. Hence, we ascertained frames and used the overall valence derived from the frame(s) in an article to develop a sense for how EBF and related BF content is portrayed.

Frerichs, Andsager, Aquilino, and Dyer (2006) claimed that breastfeeding is made more or less desirable by the breastfeeding frames created by journalists who framed breastfeeding in media. Frerichs and colleagues (2006) assessed the breastfeeding and formula feeding frames present in seven different magazines occupying niches in three genres of magazines: African American, women's, and parenting. From their sample, they determined the presence of twelve frames, six of which pertained directly to breastfeeding: "social support in breastfeeding," "partner support in breastfeeding," "breastfeeding in public," "breastfeeding barriers," "breastfeeding advice," and "breastfeeding benefits" (p. 103). Despite the wealth of knowledge and information Frerichs et al. (2006) contributed, the absence of an EBF frame, which was not studied in their research, and the ambiguity surrounding the valences of the frames underscores the importance of bringing EBF into discussion and understanding, to start, how EBF is portrayed in an American communication medium.

Method

Data

Our data was comprised of 819 newspaper articles. Newspaper articles were obtained using Access World News database. Access World News database stores local and regional newspaper articles that have been printed in the United States and many other countries. Initial search terms included "breastfeeding," "breast feed," and "breast-feeding." However, few new articles were found by searching "breast feed" and "breast-feeding" after searching "breastfeeding." Therefore, we restricted our search term to "breastfeeding." An initial search in Access World News database for newspaper articles published since 2000 yielded a search result of several thousand articles. Even when we limited our search parameters to articles published between 2010 and 2013 thousands of articles populated. Therefore, we restricted the dates between which articles could be published to between December 2010 and July 2013, and took the most relevant (to our search term "breastfeeding") 200-300 articles from each year. We were able to take the most relevant articles from each year by using the "best matches first" sorting option which is a feature of the database. Articles can be sorted by "oldest first," "newest first," or "best matches first." This process of searching, sorting, and refining allowed us to create a manageable data set.

Procedure

The first author read and coded approximately 49% (n=400) of the articles in our sample. Through this initial reading and coding, a set of breastfeeding frames was produced. For the purpose of this study, a breastfeeding frame was defined as a theme that portrays a

certain aspect of breastfeeding or portrays breastfeeding in a particular manner. This coding process involved the coding of latent content. Latent content is “the symbolism underlying physical data...the deep structural meaning conveyed by the message” (Berg, 2001, p. 242). To reduce the subjectivity of coding latent content, the second author independently read a subset of articles to validate or argue against the set of frames created by the first author. Together, the first and second authors revised the set of breastfeeding frames. The revised set of frames was entered into a codebook which was given to coders as part of their coder training. Six coders were selected to code a portion of the 819 articles using the frames laid out in the codebook. All coders received extensive coding training, which included education about EBF and BF, explanation of each frame, instruction on how to code, practice coding on practice breastfeeding articles (not included in the study sample or analysis), and discussion with the first and second authors. After coders completed their training they independently coded their portion of the articles.

Articles were coded for the presence or absence of the *EBF frame*; specifically, EBF for a time up to 6 months. *BF for a time up to 1 year* was also coded to capture the framing of BF specific to the current breastfeeding recommendation. To further our knowledge of BF frames beyond what was identified in previous research, additional frames were coded. For all non-valence codes, coders marked either a “1” for absent (the frame was not present in the article) or a “2” for present (the frame was present in the article). The additional frames are listed with descriptions below. The frames and their descriptions were developed through latent content analysis and therefore the language used is that of the content in our sample of newspaper articles, not that of the authors.

Each article was coded for valence (overall). In this study, valence was defined as the general tone evoked by reading the entire article. Coders chose from three possible ratings when determining valence (negative tone, positive tone, or neutral tone). Positive and negative valences indicated that the coder was left with an overall positive or negative impression of breastfeeding. A neutral valence indicated that the article neither evoked a net positive nor net negative impression of breastfeeding. Coders marked “1” for positive valence, “2” for negative valence, and “4” for neutral valence. A fourth option eliminated from the coding process was informational valence marked as “3”. Coders found minimal differences between neutral and informational valence, and so a decision was made to code only neutral valence and incorporate informational valences (if any) under neutral valence in the early stages of the coding process. Ultimately, nine (1%) articles including the EBF frame were considered informational and included under neutral valence.

Inter-rater reliability was conducted on a sample of 50 articles (6% of the total sample). This sample size was sufficient as the codes were easy to identify and straightforward. Fleiss’ generalized kappa coefficient measure of inter-rater reliability was performed thrice. Once to determine overall agreement for the EBF and BF recommendation frames, a second time to determine overall agreement for valence and a third time to determine overall agreement as to the presence and absence of the additional BF frames. Fleiss’ kappa gives an overall agreement score for all codes. This approach is different from other methods of determining inter-rater reliability (e.g., Cronbach's alpha). This statistic is based on number of agreements and disagreements amongst coders, and is designed for use in situations where there are several raters and multiple coding

categories. In this study, Fleiss' kappa for the EBF and BF recommendation frames was .73 (SE .16, code absent; .07, code present). Fleiss' kappa for valence was .72 (SE .09, positive valence; .40, negative valence; .20 neutral). Fleiss' kappa for the additional 48 frames was .51 (SE .07, code absent; .01, code present). Using Landis and Koch's (1977) benchmark scale for evaluating the kappa, these inter-rater reliability scores represent moderate to substantial agreement. Fleiss' (1981) benchmark classifies our levels of agreement as intermediate to good.

Frames

The 14 additional frames are listed and described in this section.

Frame	Definition
BF support	Formal/informal support groups/services, individual sources of support (e.g., lactation consultants), legal support for BF/BF women, other types of support that cannot be classified under other frames (e.g., Baby Friendly Hospital Initiative), call for improvements in BF rates.
BF benefits	Physical benefits of BF for mom and infant (e.g., protection against breast cancer, ovarian cancer, other cancers, diabetes, obesity, allergies, weight loss, infection, asthma, necrotizing enterocolitis, SIDs, other illnesses/conditions), emotional, developmental, cognitive benefits of BF, BF saving lives, other physical benefits of BF.
BF problems and/or solutions	Any type of problem with the mechanics of breastfeeding (e.g., latching) and/or solutions to such problems.
Reasons not to BF	Reasons given for why women should choose not to BF and/or not BF (not by choice) (e.g., insufficient milk supply, perceived or real, difficulty with latch, work/school responsibilities, pain, life preferences, desire for freedom, BF is too time consuming, pumping difficulties, lack of male involvement/support), other reasons not to breastfeed not captured by another frame.
Normalization of BF	Call for breastfeeding to become the default/expected and 'normal' way to feed a baby, vocalizations that BF is not deviant, etc.
BF Advice	Information designed to help make BF easier (e.g., pointers about getting organized to BF).
BF is a Choice	Breastfeeding is not something you have to perform and it is important to remember how you feed your baby is a choice, BF is a choice (it is not the default or predetermined practice), etc.
BF in public	Content in which support for BF in public is expressed or biases against BF in public held by men (and women), are expressed or opinions that BF in public is obscene, immoral, gross, indecent or inappropriate are expressed (wording is that of the content in newspaper articles), instances where women were asked to leave a public place for BF in public, instances where BF in public was equated to public urination and defecation (analogies are from the newspaper content not the authors), etc.
Breastfeeding rates	BF rates of a town, city, region discussed in relation to national rates.
Financial benefits of BF	Information about how BF is helpful financially.
BF is natural	BF described as a natural process, an organic process, etc.
Social media and BF	BF discussed in the context of social media, for example BF pictures banned from Facebook or uploaded to Facebook, etc.

Suggesting not to BF	Instances where there was a suggestion made that emphasized not breastfeeding.
Continued BF	BF longer than one year.

Results

The data collected in this study included frequency counts of an EBF frame, BF recommendation frame, and additional BF frames. The content within articles including the EBF frame and article valence was also assessed. The lack of knowledge as to the prevalence of an EBF frame in U.S. media drove this study. Hence, our primary purpose was to discover insights as to the prevalence of an EBF frame in articles published across five U.S. regions given the importance of geographically tailored news (Abdulla, Garrison, Salwen, Driscoll, & Casey, 2002); valence results provide rudimentary insight as to how EBF is discussed; where they discussed positively, negatively, etc.? Discovering the type of content mentioned in articles mentioning EBF also provided insights as to how EBF is contextualized in our sample. Recall, our exploratory study's aim to bring EBF into conversation using an unstudied mass medium. Descriptive statistics illuminated the answers to our research questions.

The answers to RQ1 are illuminated in Table 3 which shows the frequency of articles that include the EBF frame and the BF recommendation frame in each region, the ratio of the number of articles featuring the EBF frame to total number of articles published, in each region, and the ratio of the number of articles featuring the EBF frame to number of articles featuring the BF recommendation frame, in each region. The West had the highest number of articles with the EBF frame and BF recommendation frame. The South Central region had the fewest number of articles with the EBF frame. The South and South Central regions tied for the fewest number of articles with the BF recommendation frame. The EBF frame was more prevalent than the BF recommendation frame in all regions. However, no more than 22% of the articles published in any region included the EBF frame, and only 19% of articles in the entire sample included the EBF frame.

Table 3. Frequency of the EBF Frame and BF Recommendation Frame

	Northeast	Midwest	West	South	South Central
U.S. States	ME, NH, VT, MA, RI, CT, NY, PA, NJ	WI, MI, IL, IN, OH, MO, ND, SD, NE, KS, MN	ID, MT, WY, NV, UT, CO, AZ, NM, AL, WA, OR, CA, HI	DE, MD, DC, VA, NC, SC, GA, FL	KY, TN, MS, AL, OK, TX, AR, LA
Total # Articles	190	177	256	109	87
EBF Frame ^a	40	31	43	24	18
BF Rec. Frame ^b	23	26	31	15	15
EBF: Total ^c	40:190 (.2)	31:177 (.18)	43:256 (.17)	24:109 (.22)	18:87 (.21)
EBF: BF ^d	40:23 (1.7)	31:26 (1.2)	43:31 (1.4)	24:15 (1.6)	18:15 (1.2)

Note. (a) This row captures the total number of articles with the EBF frame in each region; (b) this row captures the total number of articles with the BF recommendation frame in each region; (c) this row captures the ratio of the total number of articles including the EBF frame in the region to the total number of articles in the region; (d) ratio of the total number of articles with the EBF frame in the region to the total number of articles including the BF frame in the region.

To strengthen our knowledge as to the contextualization of the EBF frame, in our sample of newspapers, we sought to determine the type of content within articles that included the EBF frame (RQ2). These findings are illustrated in Table 4. The West had the widest variety of content in such articles.

Table 4. Breastfeeding Content in Articles with the EBF Frame

Northeast	Midwest	West	South	South Central
BF support	BF support	BF support	BF support	BF up to 1 year
BF Benefits (infant) ^a : <i>infection</i> <i>diabetes</i> <i>obesity</i> <i>allergies</i>	BF up to 1 year	BF Benefits (infant): <i>other</i> <i>obesity</i> <i>infection</i> <i>asthma</i>	BF Benefits (infant): <i>infection</i> <i>obesity</i> <i>other</i>	BF Benefits (infant): <i>other</i>
BF up to 1 year	BF Benefits (infant): <i>infection</i> <i>other</i>	BF up to 1 year	BF up to 1 year	BF support
Financial benefits of BF	BF Benefits (mom) ^a : <i>breast cancer</i>	BF Rates	BF is a choice	
Normalization of BF	BF Advice	Financial benefits of BF		
BF advice	BF problems and/or solutions	Continued BF		
Reasons not to BF		BF problems and/or solutions		
		Normalization of BF		
		BF advice		
		BF Benefits (mom): <i>other</i>		

Note. (a) Benefits listed are protection against or reduced susceptibility to the listed condition/disease/illness as the result of BF.

The overall valence of articles that included the EBF frame was predominantly positive in all regions. Table 5 shows the valences (e.g., positive, negative, and neutral) of articles in each region that included the EBF frame and BF recommendation frame, illustrating the findings pertaining to RQ3. Table 6 illustrates the most frequent frames in each region, not necessarily the frames contextualizing EBF.

Table 5. Overall Valence of Articles with the EBF Frame and BF Recommendation Frame

	Northeast	Midwest	West	South	South Central
EBF Frame Articles					
Positive	36 (90%)	29 (94%)	40 (93%)	22 (92%)	14 (78%)
Negative	2 (5%)	1 (3%)	2 (5%)	2 (8%)	1 (6%)
Neutral	2 (5%)	1 (3%)	1 (2%)	0 (0%)	3 (17%)
BF Frame Articles					
Positive	19 (83%)	24 (92%)	29 (94%)	15 (100%)	11 (73%)
Negative	2 (9%)	1 (4%)	1 (3%)	0 (0%)	2 (14%)
Neutral	2 (9%)	1 (4%)	1 (3%)	0 (0%)	2 (14%)

Note. Numbers listed in table are counts. Percentages were determined by dividing a count by the total number of articles in the region with either the EBF frame or BF Frame, respectively.

Table 6. Regional Comparison of Common Frames

	Northeast	Midwest	West	South	South Central
BF support	BF support	BF support	BF support	BF support	BF support
BF benefits	BF benefits	BF benefits	BF benefits	BF benefits	BF benefits
BF problems and/or solutions	BF problems and/or solutions	BF problems and/or solutions	BF problems and/or solutions	Reasons not to BF	BF problems and/or solutions
	BF advice	BF in public	BF problems and/or solutions	BF advice	Reasons not to BF
Reasons not to BF	Reasons not to BF	Reasons not to BF	BF advice	Reasons not to BF	Reasons not to BF
Normalization of BF		Normalization of BF	Choice to BF	BF in public	BF in public
BF advice	Choice to BF	BF advice			
Choice to BF	BF is natural				Social media and BF
BF in public	Financial benefits of BF	Breastfeeding rates	BF in public	Financial benefits of BF	Financial benefits of BF
Breastfeeding rates	BF in public	Financial benefits of BF	Financial benefits of BF	Breastfeeding rates	Breastfeeding rates

In general, the breastfeeding support frame, breastfeeding benefits frame, breastfeeding problems and/or solution frame, reasons not to breastfeed frame, normalization of breastfeeding frame, breastfeeding in public frame, and breastfeeding is a choice frame were among the most frequently occurring frames across the regions. The overall valence of articles that did not mention EBF was predominantly positive. Approximately one fifth of these articles were negatively valenced.

Discussion

This study had three overarching goals. First, we sought to determine the prevalence of articles that included the EBF frame. As an understudied topic in communication research, we were curious whether EBF is infrequently mentioned in mass media. Though it is less frequently mentioned than BF, it is a sufficiently common theme to warrant future research on the subject. Second, we sought to identify the type of content contextualization of EBF in articles mentioning EBF. Our findings suggest that EBF was contextualized predominantly positively with frames supporting breastfeeding in general. EBF was typically mentioned as a recommendation supported by science as a fact to be relayed on a checklist of facts to be relayed; little nuance or detail was provided about EBF directly. More nuanced information about BF made up the bulk of the article (the specific content of such nuances made up the additional frames). Third, we assessed the valence of articles that included the EBF frame. In our study, we sought to assess neither correlation nor causation. However, our findings are intriguing in light of current EBF and BF rates both nationally and regionally.

Results revealed that despite more articles including the EBF frame than the BF recommendation frame in each region, only a small percentage ($\leq 22\%$) of articles in our sample mentioned the EBF frame. While it was surprising to see that the EBF frame was mentioned more often than the BF recommendation frame in each region, the limited references to EBF in our sample overall reflect a need to create more discussion about EBF across the U.S. as EBF is the recommended feeding practice for the first six months of life and an overwhelming majority of infants do not receive exclusively human milk for six months.

The factual and limited portrayal of EBF overall could be indicative of U.S. culture. EBF requires significant effort to perform and extends for a long period of time. Could the way in which EBF is reported in newspapers reflect a journalistic duty to relay public health recommendations and a simultaneous desire to avoid appearing to support what might be considered a largely unrealistic goal by many citizens? If this is the case, is this type of reporting a good practice? Infant feeding is a sensitive subject on many levels, is it then advisable to encourage striving for an ideal standard in mass media? Is focusing less on EBF, the normative standard, an implicit undermining of what should be encouraged if it is able to be obtained? Is giving more weight to general breastfeeding practices closing a window for education about the different breastfeeding practices and the value of EBF? We do not have the answers to these questions, but they are important public health questions worth exploring.

One opportunity that should be seized in future portrayals and discussions of EBF in media is the use of specific and deliberate language when describing feeding practices.

Exclusive breastfeeding must be described accurately according to the definition of exclusive breastfeeding. In previous research, breastfeeding was discussed in the context of terms such as bottle feeding. This is confusing because bottle feeding could refer to an individual who pumps exclusively human milk for the first six months but feeds the infant through a bottle. This would be considered EBF, though traditionally bottle feeding is likened to formula feeding. In our research we correctly labeled and identified BF language to correct for ambiguous language such as ‘bottle feeding’ and ‘hand feeding’ which were the terms used to analyze BF in previous U.S. content analyses (Foss & Southwell, 2006; Frerichs, Andsager, Aquilino, & Dyer, 2006).

Further, despite EBF and BF being different practices, the ambiguous and inaccurate language used to describe BF in previous research has implications. Perhaps, previous research has assessed EBF but has failed to relay that information because of inaccurate lumping together of EBF and BF? This issue has implications for research, but presents a second opportunity for media in the presentation of EBF. Media should not only define EBF and state current EBF recommendations, they should also explain (1) how the practices are different, (2) why the practices are each recommended at different times and for different durations, (3) the specific health benefits associated with performing each practice as recommended, and (4) the risks of not performing each practice as recommended.

Related to this second opportunity is how media presents EBF and BF. The content of articles that included the EBF frame tended to incorporate information about BF support groups, the physical benefits of BF (e.g., disease prevention), and BF advice. The information that was incorporated in these articles was largely factual and unengaging. The West was more successful in publishing content that incorporated a wider variety of information. The West also relayed information in a more engaging fashion by presenting opinions about BF and provocative BF topics. The South and South Central regions conversely had the smallest variety of information in articles that included the EBF frame and relayed the information in a factual and unengaging manner. Considering that the South and South Central regions have the highest number of infants neither EBF nor BF for the recommended duration, and the West has the lowest number, it seems advisable that Southern region media present more stimulating and engaging information about breastfeeding like in the West. Of course, the structure of media ownership and other factors may affect the ability of regional media to present such content or the extent of the effect of such content.

Lastly, the valence of articles identified in our sample was overwhelmingly positive. This trend should be continued. Future research may consider assessing the valence of individual frames in media content. Although we argue that it is the overall valence of the article that stays with the individual over time as they process information about EBF and BF, it is possible that the salience of a particular frame is more influential than the overall impression about exclusive breastfeeding or breastfeeding gained by reading an article. Thus the valence of an individual frame could carry more weight than the valence of the article. This may be particularly true in instances of highly valenced frames such as breastfeeding in public, which in our sample was an issue that tended to be staunchly supported or staunchly opposed. These considerations should be taken into account in future research which should study exclusive breastfeeding and breastfeeding with careful

attention to language. Limitations of the current research that should be addressed in future research are the lack of other types of media in our sample and analysis of national media. Our study was largely exploratory and loosely guided by theory. Future research could follow up on topics of EBF with a heavier theoretical hand.

Conclusion

EBF and BF are matters of national concern and are current public health issues. We present the first content analysis of American media to assess EBF, the normative standard against which infant health outcomes are assessed and the recommended feeding practice for the first six months of life. The differences between EBF and BF are medically important and should be maintained through the use of proper language and description in media and content analyses. We present opportunities for media to frame EBF in advantageous ways, and we expand upon currently identified BF frames to provide a more encompassing and precise perspective of EBF and BF issues across five regions in the United States.

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