

Association of hospital and community factors on the attainment of Baby-Friendly designation: A breastfeeding health promotion

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Abstract

The Baby-Friendly Hospital Initiative is a global health promotion intervention that outlines the Ten Steps hospitals should implement to support newborns' breastfeeding. This US-based study aimed to determine which hospital characteristics and community factors are associated with hospitals' attainment of Baby-Friendly designation. We used a cross-sectional design and used 2018 data from the Baby-Friendly, USA Inc. designation program merged with the American Hospital Association annual survey data set. Multilevel logistic regression analysis was used to assess hospital characteristics of interest among the sample consisting of 312 Baby-Friendly hospitals and 1449 non-Baby-Friendly. Our results show that Baby-Friendly hospitals are more likely to be government nonfederal hospitals, in the Midwest or South regions, serve communities with higher birth totals, and reside in competitive markets. Based on the results of this study, hospitals should seek further and examine their community's characteristics and structures to identify opportunities and encourage the attainment of improved breastfeeding initiatives such as Baby-Friendly designation.

KEYWORDS

American Hospital Association, breastfeeding, health promotion, hospitals, infant, newborn, perinatal care

1 | INTRODUCTION

According to the World Health Organization (WHO), over the last 20 years, 59% of infants across the world have not been exclusively breastfed for the recommended first 6 months of life, and 60% fail to be breastfed within their first hour of birth (World Health Organization, 2022). Among infants born in the United States (US) in 2018 who received any type of feeding (including infants receiving any combination of breast milk, formula, water, and solids), 83.9% were

breastfed at birth, 56.7% were breastfed until the recommended 6 months, and 35% were breastfed for a year (Centers for Disease Control and Prevention, 2021b). Additionally, among infants that were breastfed exclusively, 63.3% were breastfed for a week since birth, 51.9% were breastfed until 2 months of age, and only 25.8% were breastfed until the recommended first 6 months of life (Centers for Disease Control and Prevention, 2021a). These statistics showcase a decreasing trend in the duration of breastfeeding over time, but more so, illustrate vast differences in the percentage of

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children being breastfed at birth. Furthermore, statistics show that racial disparities in breastfeeding rates exist. The national average of children being ever breastfed is approximately 84% (Centers for Disease Control and Prevention, 2021b). Compared with this average, Asian infants more often receive breastfeeding (92.4%), while African American infants less often receive any type of breastfeeding (75.5%). African American results are also similar to infants of mothers with less than a high school education (74.9%) (Centers for Disease Control and Prevention, 2021b).

Despite these less-than-optimal overall breastfeeding rates, and specifically breastfeeding at birth, the health benefits of breastfeeding, as compared with formula, to mothers and their infants have long been espoused in the literature. Breastfeeding is associated with improved cognitive development among infants, reduced obesity rates among infants and mothers, reduced chronic illnesses, and serves to protect children from infectious diseases (Allen & Hector, 2005; Binns et al., 2016; Cleveland Clinic, 2018; Heinig, 2001).

Based on identified benefits, the WHO and the United Nations Children's Fund launched the global Baby-Friendly (BF) Hospital Initiative in 1991. The breastfeeding-promoting entity provides guidelines and designations to health facilities that produce an environment that facilitates breastfeeding and educates mothers for long-term breastfeeding success (Baby Friendly USA, 2022). The first US hospital attained BF designation in 1996. As of 2020, there were over 600 BF-designated facilities in the US, and as of 2019, over 6 million babies have been born in US BF-designated facilities (Baby Friendly USA, 2018a, 2018b). Previous research has found that infants born in BF-designated hospitals are more likely to be breastfed (Broadfoot et al., 2005). Furthermore, improved infant health and cost savings due to BF designation have been found (Meek & Noble, 2016). Breastfeeding exclusively for 6 months has also been associated with government savings of \$3.6 billion for infants and about \$17.4 million for mothers due primarily to a reduction in illnesses such as ear infections, lower respiratory infections, and gastrointestinal issues (Bartick & Reinhold, 2010). It is estimated that the US would experience total cost savings of \$13 billion per year if 90% of infants were breastfed exclusively for 6 months (Bartick & Reinhold, 2010).

Several studies have also compared outcomes, such as breastfeeding initiation, exclusivity, and duration in BF hospitals with mixed findings; however, these studies have tended to focus on a limited number of BF hospitals and primarily include mother/infant characteristics. For instance, Merewood et al. (2005) found that BF hospitals are associated with higher breastfeeding initiation and exclusivity among BF hospitals compared with national data. However, this study included a small sample of BF hospitals and studied patient demographics, with limited hospital-level data such as location and having a neonatal intensive care unit (Merewood et al., 2005). Another study examined the likelihood of BF duration 6 months postdischarge based on various infant and mother-related factors but only examined hospital factors related to the type of breastfeeding at the hospital and whether the hospital had feeding problems. Further, the data were collected from only one BF hospital

Key messages

- Organizational and community characteristics that contribute to Baby-Friendly (BF) designation attainment remain unexplained.
- The BF concept as an innovative strategic choice assists health care leaders in better supporting breastfeeding and advanced maternity care.
- Our study indicates that BF hospitals are more likely to be government nonfederal hospitals and serve communities with a higher birth total.
- Our study indicates that BF hospitals are more likely to be in the South and Midwest regions of the United States and reside in competitive markets.

(Merewood et al., 2007). Other studies have found that factors such as the number of breastfeeding practices mothers were exposed to improved breastfeeding outcomes such as initiation, duration, and exclusivity, but these studies only examined a small number of BF hospitals or consisted of a global systematic review (Hawkins et al., 2014; Pérez-Escamilla et al., 2016).

Additional studies have found that maternal factors such as having a poorer education level were associated with increased breastfeeding initiation (Hawkins et al., 2014). For example, Hawkins et al. (2015) found that breastfeeding initiation increased among mothers with a lower education level in BF hospitals. However, data was collected from BF and non-BF hospitals in five US states (Hawkins et al., 2015). Lastly, a more recent study found no association between BF status and breastfeeding initiation rates and no statistically significant association between BF status and breastfeeding duration, that is, mothers' breastfeeding posthospital discharge (Bass et al., 2020).

Baby-Friendly USA, Inc. provides BF designation to facilities, upon completion of the four-step process called the 4-D Pathway, which involves D1-discovery, D2-development, D3-dissemination, and D4-designation (Baby Friendly USA, 2022). Acquiring the designation is a multiyear process and requires hospitals to have a detailed feeding policy, which can be difficult for some hospitals to develop (Bruney et al., 2020; Burnham et al., 2021). Further, BF designation is touted as an indicator of a facility's use of evidence-based, high-quality, and safe care practices that guide infant feeding (Baby Friendly USA, 2018c). This quality seal provided by designation could incentivize hospitals and facilities to seek out BF designation to improve quality and safety indicators and/or achieve a competitive standing within their community.

However, a significant gap exists in the literature, in that hospital-level characteristics have not been considered when examining BF hospitals. To date, there have been no studies examining hospital and community characteristics associated with the designation of a national sample of BF hospitals. This is particularly important as these associations may assist in explaining

why some hospitals may be more likely to seek out and obtain BF designation than others. This study aimed to determine which hospital and community factors influence hospitals' attainment of BF designation.

2 | METHODS

This study used a secondary cross-sectional design to analyze hospital and community level data associated with BF-designated hospitals in the US.

2.1 | Data sources

This study used publicly available 2018 data from Baby-Friendly USA, Inc. (Baby Friendly USA, 2018a), US Census Bureau Current Population Survey, and Census Bureau Region and Division Codes. In addition, this study used 2018 restricted data available through licensure from American Hospital Association (AHA; American Hospital Association, 2018). Baby-Friendly USA, Inc. is the designating body of BF status in the US. They maintain and update a publicly available, comprehensive list of all BF hospitals in the US, including designation and redesignation dates. The list provides the hospital name, location, and recognition years. We used two techniques to link BF facilities with their corresponding CMS Certification Number (CCN). The first technique matched hospitals by name and location to the AHA annual surveys and the 2018 CMS Medicare Inpatient Hospital Look-up Tool (Centers for Medicare and Medicaid Services, 2019). The second technique was to use a two-member data checking strategy, where each member checked the accuracy of the matched hospitals by confirming the hospital name, CCN, and BF status and recognition years. All team members evaluated the three datasets for any discrepancies to ensure accuracy. All team members evaluated the three datasets for any discrepancies to ensure accuracy. The AHA database stores annual survey information from over 6000 hospitals, focusing on hospital characteristics and functions. We linked the multiple data sets using the Hospital Medicare Provider Identification number and Federal Information Processing Standards Codes for States.

2.2 | Measures

Our key independent variable was BF designation (BF designation or non-BF designation). BF designation was reported using a binary variable (1 = BF designated; 0 = non-BF designated).

Hospital characteristics included: hospital size (small: 0–99 beds, medium: 100–200 beds, large: 200+ beds), ownership status (government nonfederal, for-profit, and not-for-profit), teaching status (teaching and nonteaching), system membership (part of a system and not part of a system), network membership (part of a network and not part of a network), rurality (rural and nonrural),

accountable care organizations (ACOs) (a part of an ACO or not a part of an ACO), and Medicaid percentage. The AHA defines government, nonfederal hospital ownership status as state hospitals controlled by an agency of state government, county hospitals controlled by an agency of county government, city hospitals controlled by an agency of municipal government, city–county hospitals controlled jointly by agencies or municipal and county government, and district hospitals controlled by a political subdivision of a state, county, or city created solely to establish and maintain medical care or health-related care institutions (American Hospital Association, 2018). Medicaid percentage was calculated by dividing the total number of Medicaid days by inpatient days multiplied by 100. We also included total births categorized as “low” with a mean of 200 births, “medium” with a mean of 738 births, and “high” with a mean of 2758 births. To determine the score cut-off points for each category, three tertials were utilized (Kozhimannil et al., 2016).

Community characteristic differences were identified using an a priori approach. These community characteristics have previously been associated with childbirth and hospitals' attainment of accreditations or designations in the literature (Tai & Bame, 2017). Thus, the percent of females at childbearing age, percent of Hispanic females, and percent of African American females were included to account for the demand for reproductive health services and racial disparities. Region (Northeast, Midwest, South, and West) was used to adjust for geographic differences (US Census Bureau, 2021). Finally, we included the Herfindahl–Hirschman Index (HHI) as a measure of market share competition, which may influence the likelihood of pursuing designations to achieve a competitive advantage. The HHI is an estimated ratio that assesses a facility's market share by dividing the hospital's total number of inpatient days and the county's total number of inpatient days. A zero HHI illustrates a competitive market, and an HHI of one represents a monopolistic market (Capps & Dranove, 2011).

2.3 | Data analysis

We summarized findings using frequency and percentage for categorical variables and means and standard deviations for numeric variables using STATA 14 SE. A mixed model was used to adjust for the county nesting effect. The analysis was limited to counties with at least one BF and one non-BF hospital, further, acute care hospitals and only hospitals with nonmissing variables were included in the analysis. We excluded any federal hospitals because of specific patient populations. This study analyzed data from 1761 hospitals across 1019 counties. Counties pertain to a level (rather than a predictor variable). In contrast, hospital characteristics, such as size and ownership, pertain to a predictor variable because its categories are both nonrandom and theoretically meaningful.

Therefore, the mixed-effects logistic regression analysis considers the variations because of the nesting structure in the data and allows the examination of the effects of group-level (county) and individual-level variables (hospital) on individual-level outcomes.

TABLE 1 Descriptive statistics of Baby-Friendly Hospitals

	Baby-Friendly (N = 312)		Non-Baby-Friendly (N = 1449)		p-value	
	N	%	N	%		
<i>Hospital characteristics</i>						
Hospital size					0.00	
Small	39	12.5	360	24.84		
Medium	166	53.21	821	56.66		
Large	107	34.29	268	18.5		
Ownership status					0.00	
Government	61	19.55	208	14.35		
For-profit	12	3.85	181	12.49		
Not-for-profit	239	76.6	1060	73.15		
Teaching hospital					0.00	
No	84	26.92	595	41.06		
Yes	228	73.08	854	58.94		
Part of a system					0.236	
No	67	21.47	357	24.64		
Yes	245	78.53	1092	75.36		
Part of a network					0.017	
No	131	41.99	716	49.41		
Yes	181	58.01	733	50.59		
Rural					0.00	
No	276	88.46	1050	72.46		
Yes	36	11.54	399	27.54		
Accountable care organization					0.00	
No	121	38.78	733	50.59		
Yes	191	61.22	716	49.41		
<i>Community characteristics</i>						
Region					0.00	
Northeast	74	23.72	221	15.25		
Midwest	103	33.01	391	26.98		
South	108	34.62	549	37.89		
West	27	8.65	288	19.88		
Birth cut: Total births					0.00	
Low	25	8.01	285	19.67		
Medium	102	32.69	537	37.06		
High	185	59.29	627	43.27		
		μ	SD	μ	SD	p-value
Hospital Medicaid percentage		23.52	12.74	21.66	12.45	0.00

TABLE 1 (Continued)

	μ	SD	μ	SD	p-value
Herfindahl-Hirschman Index	0.60	0.37	0.71	0.36	0.00
Percent childbearing age	45.47	4.55	44.40	4.62	0.00
Percent Hispanic female	12.25	12.19	15.53	17.09	0.00
Percent African American female	16.26	14.84	11.08	12.89	0.00

We tested all variables for multicollinearity. The institutional review board at the University of North Florida determined this analysis to be exempt from additional oversight (Study No. 1828828-1).

3 | RESULTS

We examined 1761 US hospitals and found that 17.72% (N = 312) of our sample had obtained a BF designation (Table 1). Results indicate that the distribution of hospitals in the study is representative of all US hospitals. Most of the hospitals in our sample are not-for-profit, teaching, part of a system, part of a network and are in an urban area. Specifically, a greater percentage of medium hospitals (53.21%) were designated as BF, while 12.50% of small hospitals were BF. Additionally, 73.08% of hospitals with major or minor teaching affiliations were BF, while 26.92% of nonteaching hospitals obtained BF designation. Only 11.54% of all rural hospitals in the sample had BF designation; on the other hand, 88.46% of urban hospitals were BF. Also, 61.22% of hospitals participating in an ACO were BF. Finally, 59.29% of hospitals with a high number of births were BF, while only 8.01% of hospitals with low total births were BF.

When exploring community characteristics, the mean HHI of BF hospitals was 0.60 compared with 0.71 for non-BF hospitals. Most BF hospitals (number of BF hospitals in the region divided by the total number of BF facilities throughout the US) were in the South (34.62%) and the Midwest (33.01%). Counties, where a BF hospital was located, had a higher average percentage of women of childbearing age (45.47%) than non-BF hospitals (44.40%). Lastly, BF hospitals were also found in counties with a higher percentage of African American females at 16.26% and a lower percentage of Hispanic females at 12.25%.

Table 2 shows the distribution of BF designation, hospital, and community characteristics by geographic region. The highest percentage of BF hospitals (number of BF hospitals divided by the number of hospitals in the region) is in the Northeast (25.08%) and the lowest in the West (8.57%). A larger proportion of hospitals are in rural areas in both the Midwest (29.15%) and South (28.615) regions. The lowest percentage of Hispanic females was in the Midwest (7.38%), and the highest percentage of African American females was in the South (19.09%).

TABLE 2 Descriptive statistics by region

	Northeast (N = 295)		Midwest (N = 494)		South (N = 657)		West (N = 315)		
	N	%	N	%	N	%	N	%	
<i>Hospital characteristics</i>									
Baby-Friendly designation									
No	221	74.92	391	79.15	549	83.56	288	91.43	
Yes	74	25.08	103	20.85	108	16.44	27	8.57	
Hospital size									
Small	39	13.22	134	27.13	150	22.83	76	24.13	
Medium	177	60	268	54.25	362	55.1	180	57.14	
Large	79	26.78	92	18.62	145	22.07	59	18.73	
Ownership status									
Government	21	7.12	58	11.74	147	22.37	43	13.65	
For-profit	7	2.37	20	4.05	134	20.4	32	10.16	
Not-for-profit	267	90.51	416	84.21	376	57.23	240	76.19	
Teaching hospital									
No	71	24.07	195	39.47	300	45.66	113	35.87	
Yes	224	75.93	299	60.53	357	54.34	202	64.13	
Part of a system									
No	82	27.8	124	25.1	148	22.53	70	22.22	
Yes	213	72.2	370	74.9	509	77.47	245	77.78	
Part of a network									
No	105	35.59	220	44.53	354	53.88	168	53.33	
Yes	190	64.41	274	55.47	303	46.12	147	46.67	
Rural									
No	248	84.07	350	70.85	469	71.39	259	82.22	
Yes	47	15.93	144	29.15	188	28.61	56	17.78	
Accountable care organization									
No	118	40	179	36.23	385	58.6	172	54.6	
Yes	177	60	315	63.77	272	41.4	143	45.4	
<i>Community characteristics</i>									
Birth cut: Total births									
Low	41	13.9	109	22.06	126	19.18	34	10.79	
Medium	112	37.97	200	40.49	226	34.4	101	32.06	
High	142	48.14	185	37.45	305	46.42	180	57.14	
		μ	SD	μ	SD	μ	SD	μ	SD
Hospital Medicaid percentage		24.91	14.62	53.12	13.10	51.15	13.02	45.76	12.64
Herfindahl-Hirschman Index		0.74	0.36	0.72	0.34	0.67	0.37	0.65	0.39
Percent childbearing age		43.51	4.22	43.87	4.10	44.86	5.06	46.16	4.34

(Continues)

TABLE 3 The effects of hospital Baby-Friendly status on community and hospital characteristics

	Baby-Friendly Hospitals	
	OR	[95% CI]
<i>Hospital characteristics</i>		
Hospital size (referent: Small)		
Medium	1.12	[0.69, 1.83]
Large	1.37	[0.76, 2.47]
Ownership status (referent: Government)		
For-profit	0.19 ^{***}	[0.09, 0.42]
Not-for-profit	0.57 [*]	[0.36, 0.90]
Teaching status (referent: No)	1.03	[0.70, 1.52]
Part of a system (referent: No)	1.30	[0.87, 1.94]
Part of a network (referent: No)	1.00	[0.73, 1.36]
Accountable care organization (referent: No)	1.14	[0.82, 1.58]
Hospital Medicaid percentage	1.01	[0.99, 1.02]
<i>Community characteristics</i>		
Region (referent: Northeast)		
Midwest	2.05 ^{**}	[1.28, 3.28]
South	1.60 [*]	[1.04, 2.45]
West	0.65	[0.34, 1.23]
Birth cut: Total births (referent: Low)		
Medium	2.12 ^{**}	[1.21, 3.73]
High	2.57 ^{**}	[1.33, 4.97]
Herfindahl-Hirschman Index	0.63 [*]	[0.40, 0.99]
Percent childbearing age	1.03	[0.99, 1.07]
Percent Hispanic female	1.02 [*]	[1.00, 1.03]
Percent African American female	0.98 [*]	[0.97, 1.00]
Log-lik full model	-743.85	
AIC	1527.71	
BIC	1637.18	

Note: 95% confidence intervals in brackets.

Abbreviations: AIC, Akaike's Information Criteria; BIC, Bayes Information Criteria; CI, confidence interval; OR odds ratio.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 3 shows the models assessing community and hospital characteristics and their association with BF designation. In the overall model, both for-profit (odds ratio [OR]: 0.19; 95% confidence interval [CI]: 0.09, 0.42) and not-for-profit (OR: 0.57; 95% CI: 0.36, 0.90) hospitals had reduced odds of obtaining BF designation than nonfederal government hospitals. Also, hospitals in less competitive markets had lower odds of obtaining a BF designation (OR: 0.63; 95% CI: 0.40, 0.99). When considering location, hospitals in the South

(OR: 1.60; 95% CI: 1.04, 2.45) and Midwest (OR: 2.05; 95% CI: 1.28, 3.28) regions of the US had increased odds of being a BF than those in the Northeast region. Further, hospitals with high (OR: 2.57; 95% CI: 1.33, 4.97) and medium (OR: 2.12; 95% CI: 1.21, 3.73) total births had increased odds of being BF than those with low total births.

4 | DISCUSSION

The results of this study reveal that both hospital and community factors are associated with hospitals' attainment of BF designation. Specifically, we found associations with hospital ownership status, geographic location, market competition, and county total births. After adjusting for county and hospital characteristics, BF hospitals were more likely to be government nonfederal hospitals. This finding is important as for-profit and not-for-profit hospitals prioritize and are more likely to provide profitable services than government hospitals, whose care of a disproportionately large amount of underserved patients negatively impacts their bottom line (Bai et al., 2021; Horwitz, 2005). Further, some states, such as Florida, have encouraged their hospitals to be BF and, in doing so, have targeted their government nonfederal hospitals (Miller et al., 2018). This may explain the reduced difference between government nonfederal and not-for-profit hospitals compared with for-profit hospitals.

We also found that BF-designated hospitals were more likely to be located in areas with a higher number of births. The introduction of the Community Health Needs Assessment (CHNA) under the 2010 Patient Protection and Affordable Care Act could explain this finding as not-for-profit and government nonfederal hospitals were tasked with focusing their efforts to align with the need in their communities (Hamadi et al., 2019). Not-for-profit and government nonfederal hospitals that reportedly made more progress in CHNA implementation focus more on community health improvement. This is true for other designation statuses, such as the Magnet designation (Boamah et al., 2022).

Our findings also highlight significant geographic differences in organizations with BF designation. These findings may be best viewed through the ecology model, which examines the inter-relationship of individual, interpersonal, and organizational factors within the health system's environment (Hamadi et al., 2019). It suggests that health systems must continue to evolve and adapt to their environments to meet the needs of their communities should they want to remain viable. Further, this logic can be applied to hospital organizations that continuously seek other innovative ventures and avenues, such as designations, which will keep their organization viable and superior, thus promoting competition in the region. Further, the increased likelihood of having a BF designation in these regions could also be associated with hospital competition. We found that hospitals in less competitive and monopolistic markets were 37% less likely to obtain a BF designation. This could be because hospitals that reside in more competitive environments/communities seek these designations or recognitions to foster or maintain a competitive edge over other organizations. They may only

maintain that competitive edge if innovative practices are adopted (Powers & Sanders, 2013). As a result, regions with a greater percentage of hospitals with the BF designation may also see a continued increase in facilities pursuing the designation to not fall behind other competition hospitals.

In line with this logic, we found that hospitals located in the South and Midwest regions of the US were more likely to be BF than those in the Northeast region when considering the proportion of all BF hospitals. Regarding hospital accreditation designation, geographic differences have consistently been found in the literature. For example, one study found that Magnet hospitals were predominantly located in the northeastern region of the United States (Tai & Bame, 2017). Additionally, studies have shown that significant local and regional variations in cost, quality, and types of clinical services exist (Van Parys, 2016). Geographical differences included in the model help us control for confounding biases shaped by similar market and economic conditions and account for regional practice pattern variation (Van Parys, 2016). However, the variation may not be due to demographic or geographic influences but to the local environment (Molitor, 2018). Molitor (2018) further concludes that environmental factors impact between 60% and 80% of the regional differences in physician practice as physicians relocating adjust their behavior to reflect the new environment. The variation in different designations and accreditations among regions could be explained by the differing needs of the region's population and the region's public health objectives. As such, the increased likelihood of BF hospitals in the South and Midwest may be attributed to a greater need to improve the quality of care for infants in these areas (National Academies of Sciences, Engineering, and Medicine, 2017).

On the other hand, we did not find a statistically significant difference between BF attainment and the hospital's Medicaid percentage. However, the literature suggests that Women, Infants, and Children (WIC) participation improves pregnancy outcomes, childcare, and breastfeeding initiation, each of which provides long-term benefits to the babies (Chatterji & Brooks-Gunn, 2004; Procaccini et al., 2018). A previous study showed that infants participating in the government assistance program, WIC, who were breastfed rather than formula-fed accounted for a total saving of about \$9.1 billion, whereby medical costs account for \$1.5 billion and reductions in early death account for \$6.9 billion (Jung et al., 2019; Oliveira et al., 2019).

Additionally, we found an association between race and ethnicity and BF designation; however, the association has a small effect size and is in line with prior research. A previous inquiry has shown that compared with non-BF hospitals, BF hospitals have higher breastfeeding rates, particularly for minority women (Vasquez & Berg, 2012). Likewise, BF hospitals experienced climbing breastfeeding rates, the most dramatic of which occurred in African American mothers (Philipp et al., 2001). For these mothers, the breastfeeding rates increased by 30% during the year BF policies were being implemented and by an additional 10% in the year after BF policies had been in place. However, other work suggests that these improvements in breastfeeding rates will occur in BF hospitals,

regardless of any demographic factors typically associated with lower breastfeeding rates (Patterson et al., 2018). The current study advances the previous evidence by further defining the community characteristics which hospitals with BF designation serve. These results also support the idea that hospitals choosing to participate in the BF initiative have a strategic motivation to address key needs in their communities.

4.1 | Practice and policy implications

Hospital support for breastfeeding services can help foster a relationship with mothers and the community by acknowledging their role in making health care decisions for their families. This relationship, especially among minority women, can provide an opportunity for hospitals to provide ongoing health care services to the mother and her family. Race is an important predictor of breastfeeding prevalence in the US, with rates lowest among African American populations. Race and geography are the two main predictors of breastfeeding outcomes (Anstey et al., 2017; Gallo et al., 2019). There needs to be a political push for an initiative to increase compliance with the Ten Steps, address a community need, incorporate community engagement and hospital-based change, and decrease racial and geographic inequities in breastfeeding (Burnham et al., 2022).

Practitioners can use these findings to assess the potential for their hospitals' successful adoption of the BF concept. These findings can lend themselves to improving strategies for addressing present and future community needs for obstetrics by women delivering at these hospitals. Our findings suggest that regional variation and hospital characteristics differences influence the attainment of BF designation. There do appear to be some potentially missing opportunities to meet the need of minority women and those receiving Medicaid benefits. Policymakers can use these findings to inform policy decisions and encourage hospitals to determine if organizational CHNAs assess the breastfeeding needs of the communities they serve. This study suggests there are opportunities to address these needs better (Matoff-Stepp et al., 2014).

4.2 | Limitations

The timing of when a hospital received its BF designation was challenging to account for in this study. The BF variable was operationalized in a cross-sectional manner wherein BF was categorized based on status at the beginning of the study period. As such, it was not possible to determine the duration effects of BF designation, which could be a source of information bias. However, the findings from this study are generalizable as it examines census data of all hospitals in the United States who achieved BF designation. Additionally, this study cannot account for the state- or region-specific policies such as Mississippi Communities and Hospitals Advancing Maternity Practices (Burnham et al., 2022) or link BF

designation to claims reimbursement that might impact hospitals seeking BF designation (Gambari et al., 2022). Additionally, data sources did not provide information on counties' birth rates and racial distribution of birth rates. Further, as our study uses 2018 data and was conducted before the COVID-19 pandemic, it is unclear how, if any, COVID-19 impacted hospitals seeking BF designation, redesignation, or already designated BF hospitals.

5 | CONCLUSION

The results of this study reveal that both hospital and community factors influence the presence of BF hospitals. Specifically, we found associations with hospital ownership status, geographic location, market competition, and county total births. Based on the results of this study, hospitals should seek further and examine their community's characteristics and structures to identify opportunities to encourage the attainment and improve breastfeeding initiatives such as BF designation.

AUTHOR CONTRIBUTIONS

Aurora Tafili, Aaron Spaulding, Hanadi Y. Hamadi, and Nazik M. A. Zakari performed the research. Aurora Tafili, Aaron Spaulding, and Hanadi Y. Hamadi conceived and designed the study. Hanadi Y. Hamadi and Aurora Tafili analyzed and interpreted the data. Aurora Tafili, Aaron Spaulding, Hanadi Y. Hamadi, and Nazik M. A. Zakari wrote the paper. Nazik M. A. Zakari and Aaron Spaulding provided critical revision of the manuscript for important intellectual content. All authors have read and approved the final manuscript.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the American Hospital Association. Restrictions apply to the availability of these data, which were used under license for this study. Data are available <https://www.aha.org/> with the permission of the American Hospital Association.

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