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Missed Nursing Care During Labor and Birth and Exclusive Breastfeeding During Hospitalization for Childbirth

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Abstract

Purpose: The purpose of this study was to determine associations between missed nursing care and nurse staffing during labor and birth, and exclusive breastmilk feeding at hospital discharge.

Study Design and Methods: Labor and birth nurses (n=512) from 36 hospitals in 3 states were surveyed about missed nursing care and facility adherence to nurse staffing guidelines for care during labor and birth, using the Perinatal Misscare Survey and nurses' report of AWHONN (2010) staffing guideline compliance. Nursing responses were aggregated to the hospital level and estimated associations between missed nursing care, nurse staffing, and hospitals' exclusive breast milk feeding rates were measured using 2016 Joint Commission perinatal care measure (PC-05).

Results: The mean exclusive breast milk feeding rate was 53% (range 13–76%). Skin-to-skin care, breastfeeding within one hour of birth, and appropriate recovery care were on average occasionally missed (2.33–2.46 out of 4) and were associated with PC-05 [B(CI) –17.1(–29,–6.3), –17.9(–30.5, –6.2), and –15.4(–28.7,–2.1), respectively]. Adherence with overall staffing guidelines was associated with PC-05 [12.9(3.4, 24.3). Missed nursing care was an independent predictor of PC-05 [–14.6(–26.4, –2.7)] in a multi-level model adjusting for staffing guideline adherence, perceived quality, mean age of respondents, and nurse burnout.

Clinical Implications: Exclusive breast milk feeding is a national quality indicator. Nurses have substantial responsibility for direct support of infant feeding during the childbirth hospitalization. These results support exclusive breast milk feeding (PC-05) as a nurse-sensitive quality indicator.

Keywords

breast feeding; health care rationing; maternal-child nursing; Nursing Care standards*

Introduction

An important aspect of nursing care during labor, birth, and postpartum is promoting and supporting families to reach their infant feeding goals. Initiation of human milk feeding during the childbirth hospitalization contributes to human milk feeding after discharge (Redshaw et al., 2014). There are numerous opportunities for maternity nurses in the inpatient setting to facilitate breastfeeding including skin-to-skin contact immediately after birth, assisting with breastfeeding within the first hour of life, and keeping healthy mothers and babies together postpartum (World Health Organization [WHO], 2018). Applying knowledge of breastfeeding to assist new parents, encouragement and support, and appropriate referral to lactation consultants when indicated are essential nursing interventions. We acknowledge that persons who are breast/chest feeding or providing human milk may not identify as women or mothers.

Professional Organizations' Support for Exclusive Breastfeeding during Newborn Hospitalization

The Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN, 2015, 2016), the American College of Nurse-Midwives (ACNM, 2016), the American Academy of Pediatrics (AAP, 2012), and the American College of Obstetricians and Gynecologists (ACOG, 2018) have professional guidelines on the importance of breastfeeding for newborn health. In 2009, the Joint Commission convened a technical advisory panel of expert clinicians to select the most important perinatal care measures from the 17 voluntary consensus measures for perinatal care that had been endorsed by the National Quality Forum in 2008 (National Quality Forum, 2008). The panel chose exclusive breast milk feeding during the entire newborn hospitalization as one of the five quality indicators that hospitals with Joint Commission accreditation are required to measure and report (Joint Commission, 2009). The initial phase of adoption of the perinatal care measures included hospitals with a 1100 births per year (Joint Commission, 2009). Effective January 2019, all Joint Commission accredited hospitals with 300 live births annually are required to report data on the rate of exclusive breast milk feeding for newborns during hospitalization (Joint Commission, 2018), which includes approximately 80% of US birthing hospitals (Simpson, 2011).

Human milk feeding practices in birthing hospitals are likewise promoted by Baby Friendly USA, an organization that was started in 1991 based on publication of the *Ten Steps to Successful Breastfeeding* by WHO and the United Nations Children's Fund (UNICEF). These guidelines were recently updated to cover more specific recommendations for implementation and data collection processes (WHO, 2018). Over the past ten years, more than 500 birthing hospitals in the United States have been designated as Baby Friendly Hospitals (Baby Friendly USA, 2018).

Beyond the obvious reasons to promote newborn health, birthing hospitals in the United States have been incentivized by accrediting organizations to support and measure exclusive breast milk feeding during the newborn hospitalization. Consumers can access quality measure data such as breastfeeding rates at hospitals in their area and may consider these data in choosing where they give birth (Maurer et al., 2019; Maurer et al., 2016). Many hospitals advertise to consumers on their website and via other media about their maternity services including designation as Baby-Friendly hospitals (Baby Friendly USA, 2018).

Care Practices to Promote Exclusive Breast Milk Feeding

Early skin-to-skin contact and breastfeeding during the first hour after birth have been shown to have a positive impact on exclusive breastfeeding at hospital discharge (Redshaw et al., 2014) and continued breastfeeding 1 to 4 months postpartum (Moore et al., 2016). Clinicians and leaders in maternity units have developed and refined processes to encourage new mothers to hold their babies skin-to-skin immediately after birth, including those who give birth via cesarean (Hung & Berg, 2011; Redshaw et al., 2014; Sundin & Mazac, 2015). These efforts have resulted in improving breastfeeding rates of mothers who have chosen breastfeeding and mothers' satisfaction with the childbirth experience (Brubaker et al., 2019; Karimi et al., 2019; Widstrom et al., 2019). Skin-to-skin contact between mother and baby as soon as possible after birth to enhance breastfeeding and breastfeeding within one hour after birth are promoted by professional organizations including AWHONN (2016), ACNM (2013), AAP (Feldman-Winter et al., 2016), ACOG (2018), the International Lactation Consultant Association (2014), and Lamaze International (Crenshaw, 2014).

Missed Nursing Care

Nurse staffing is related to the ability of nurses to fully perform essential aspects of care for optimal outcomes. Inadequate nurse staffing may not allow nurses to do all they need to do for a given patient or group of patients (Ball et al., 2014; Griffiths, Ball, et al., 2018; Griffiths, Recio-Saucedo, et al., 2018; Kalisch Landstrom, & Williams, 2009; Kalisch et al., 2011; Lucero et al., 2010). Kalisch labeled this concept as "missed nursing care" and began its study over a decade ago (Kalisch, 2006; Kalisch, Landstrom, & Williams, 2009; Kalisch, Landstrom, & Hinshaw, 2009). Missed nursing care has been described in other terms such as care left undone, care rationing, and errors of omission (Kalisch, Landstrom, & Williams, 2009; Recio-Saucedo et al., 2018). Nearly all of the data about missed nursing care have been from medical-surgical units in acute care hospitals. Recently, researchers have studied missed nursing care in neonatal intensive care units (NICUs) and pediatric units (Lake et al., 2017; Tubbs-Cooley & Gurses, 2017; Tubbs-Cooley et al., 2019).

In 2012 AWHONN began funding research on nurse staffing during labor and birth using the concept of missed nursing care. Our team evaluated nurse staffing from the perspective of labor nurses, new mothers, and physicians who attend birth, via a series of focus groups that included 95 experienced labor nurses from 23 states, 23 new mothers who gave birth at a community hospital, and nine physicians who attend births and practice at an academic or community hospital (Lyndon et al., 2017; Simpson & Lyndon, 2017; Simpson et al., 2016; Simpson et al., 2012). As reported elsewhere, we used the focus groups to help us adapt the tool used to measure missed nursing care in the medical-surgical clinical setting by Kalisch

and colleagues (Kalisch & Williams, 2009) to the maternity setting (Simpson et al., 2019a). As part of that study, new mothers, nurses, and physicians indicated they believed the Joint Commission's exclusive breast milk feeding to be a nurse-sensitive outcome (Lyndon et al., 2017).

Labor nurses participated in an online survey using the adapted tool, the Perinatal Missed Care Survey, to get information about their ability to complete essential aspects of nursing care during labor and birth, relative to their hospitals' adherence to AWHONN (2010) nurse staffing guidelines and to patient outcomes. Here we report on the relationship between aspects of required nursing care that may be missed, adherence with aspects of AWHONN (2010) nurse staffing guidelines during labor and birth, and hospitals' rates of exclusive breast milk feeding as reported by participants' hospitals to the Joint Commission.

Methods

The methods for development and distribution of the survey have been described previously (Simpson, et al., 2019a, 2019b). In brief, labor nurses in three states (California, Michigan, and New Jersey) were invited to participate in an on-line survey. Maternity nurse leaders in birthing hospitals in these states were identified from a database of hospitals participating in perinatal quality care collaboratives. An email invitation explaining the study was sent to the nurse leaders. If the nurse leader agreed to participate, labor nurses in their hospital were invited to participate either via an email from our study center or via an email from the nurse leader that contained a link to the on-line survey. Nurses received an initial invitation to participate with up to two follow-up invitations. Institutional review board approval was obtained at the investigators' institutions and at local hospitals that required human subjects approval specific to their hospital.

Survey

The survey was estimated to take 10 to 15 minutes to complete and had multiple sections. The completeness of required nursing care was assessed using 25 items listing essential aspects of nursing care during labor and birth and asking nurses to indicate how often that care was missed by nurses on the unit including themselves (rarely, occasionally, frequently, or always missed). Reasons for missed nursing care were assessed by rating 16 potential reasons as (1) not a reason, (2) a minor factor, (3) a moderate factor, or (4) a significant factor in missed nursing care. Previous psychometric testing of the Perinatal Missed Nursing Care measures indicated a single factor solution for Aspects of Required Nursing Care, and a two-factor solution for Reasons for Missed Nursing Care, with one subscale representing experiences of communication problems ($\alpha = 0.963$) and another subscale representing inadequate staffing resources ($\alpha = 0.959$) (Simpson et al., 2019a).

Adherence to AWHONN (2010) staffing guidelines was assessed with 25 items addressing the frequency with which the unit met specific components of the guidelines (rarely, occasionally, frequently, or always). Demographic data including age, race/ethnicity, education, experience, role, and employment status; and measures of safety climate (Safety Attitudes Questionnaire Safety Climate Scale, Sexton et al., 2006); burnout (derived from

the Emotional Exhaustion scale of the Maslach Burnout Inventory, Profit et al., 2014); and perceived quality of nursing care (McHugh & Stimpfel, 2012) were also collected.

Hospital Measures

Hospital type, teaching status, and birth volumes and were obtained from the 2016 American Hospital Association (AHA, 2017) Annual Survey Database. Exclusive Breast Milk Feeding rates for each hospital, as defined by the Joint Commission's Perinatal Care Measure PC-05 were obtained from http://www.healthcarequalitydata.org/. This standard measure reflects the proportion of newborns who are exclusively fed breast milk for the duration of their birth hospitalization. The rate excludes infants likely to have barriers to breastfeeding, including those who are born preterm (<37 completed weeks of gestation), admitted to a NICU, or have a length of stay >120 days.

Data Analysis

Descriptive statistics were used to summarize the characteristics of survey respondents and their hospitals, scores on the missed nursing care and staffing measures, birth volume, and hospital-level exclusive breast milk feeding rates. Mean missed nursing care scores and mean staffing guideline adherence scores were calculated for each hospital. For the mean missed nursing care score, 24 of the original 25 items were used based on previous factor analysis (Simpson et al., 2019a). For the mean staffing guideline adherence score, 19 of the original 25 items were used to reduce redundancy (one of two triage items, one of two antepartum items, and a mean of 5 items related to medical complications). To obtain reliable hospital-level estimates, only hospitals with at least 4 completed nurse surveys were included in hospital-level analyses as per procedures used in previous research (Lake et al., 2017; Simpson et al., 2019b).

To describe unadjusted and adjusted hospital-level associations between exclusive breast milk feeding rates and missed nursing care, nurse staffing, quality of nursing care, and selected respondent and hospital characteristics, simple and multi-level multivariable regression analyses were performed. Models were bootstrapped with 1000 draws to account for non-normal distributions. A significance level of p<0.05 and Stata SE 15 were used for all analyses.

Results

The invitation to participate in the study was sent to 2,650 labor nurses in California, Michigan, and New Jersey; 783 nurses opened the survey online; 669 surveys, representing 67 hospitals, had useable data. Of those, 50 hospitals reported Joint Commission Perinatal Care data, 36 of which had at least four participants and were included in the analysis, resulting in a sample of 512 registered nurses (RNs). Participants were mostly white, with BSN or higher level of education, working full-time, with mean 16.7 years' experience as an RN and 13.7 years' experience as a nurse caring for people during labor and birth. Half the participants worked day shift while the remainder worked evenings, nights, or rotating shifts. Most participants worked as staff nurses or in a combined staff and charge nurse role (Table 1).

Hospitals represented in the sample had a wide range of birth volumes, were predominantly not-for-profit, and 29 of 36 had a medical school affiliation, a medical residency program, or both (Table 2). The mean exclusive breastfeeding rate was 53% (range 13–76%). Twenty-four of the represented hospitals were from Michigan, seven were from New Jersey, and five were from California. The mean exclusive breast milk feeding rate in the California hospitals was significantly higher than in the New Jersey hospitals (64.5% vs. 43%, p=.049). The difference between the California and Michigan mean exclusive breast milk feeding rates (64.5% vs. 53.4%) was clinically, but not statistically, significant.

The mean hospital-level missed nursing care score was 2.47, representing required nursing care being more than occasionally delayed, unfinished, or completely missed (Table 3). Mean breast milk feeding-related item scores were slightly lower but still indicate skin-to-skin care and breastfeeding within one hour of birth being missed at least occasionally. Bivariate analyses demonstrated significant relationships between exclusive breast milk feeding rate and frequency of missing immediate skin-to-skin contact after birth, breastfeeding within one hour of birth, and frequency of missed care overall; reasons for missed nursing care (communication problems and inadequate staffing/resources); reported staffing guideline adherence; quality of nursing care; age; and burnout (Table 3). Education level, years' experience in labor and birth, birth volume, and safety climate score were not associated with exclusive breastfeeding rates on bivariate analysis and were excluded from further modeling. Both scales of the Reasons for Missed Nursing Care had high co-linearity with other variables and were also excluded from further analysis.

In the multivariable model of missed nursing care score on exclusive breast milk feeding the overall missed nursing care score was an independent predictor of hospitals' exclusive breast milk feeding rate after adjusting for staffing guideline adherence score, perceived quality of nursing care, mean age of respondents, and mean burnout scores of respondents (Table 4). Missed nursing care accounted for 10% of the variance in hospital exclusive breast milk feeding rates in the adjusted multi-level model.

Discussion & Clinical Implications

We tested relationships between perinatal nursing care and the patient outcome of exclusive breast milk feeding. Hospitals' exclusive breast milk feeding rates as measured by the Joint Commission PC-05 were associated with missing individual aspects of nursing care related to human milk feeding, the overall frequency of missing essential aspects of care during labor and birth, and overall staffing guideline adherence. Overall missed nursing care frequency was independently associated with exclusive breast milk feeding. These findings provide preliminary validation of the suggestion by participants of our earlier study that the PC-05 measure is likely nurse-sensitive (Lyndon et al., 2017).

Previous research has found relationships between nurse staffing adequacy and provision of support for human milk feeding to parents of infants in the NICU (Hollowell et al., 2014). Nursing support for human milk feeding was associated with infants' receipt of either combination feeds or exclusive human milk at discharge from the NICU (Hollowell et al., 2016). A qualitative descriptive study of 10 nurses' experiences with skin-to-skin care in the

operating room following cesarean birth (Balatero et al., 2019) identified the configuration and allocation of nursing staff at cesarean birth as barriers to initiating skin-to-skin contact in the operating room. Two-thirds of participants reported their hospitals prioritized assigning nurses to other patient care situations and rarely met guidelines of one nurse for mother and one nurse for baby during this time. An institutional ethnography of breastfeeding support by nurses working night shift found that nurse staffing was one of several factors influencing the amount of breastfeeding support at night, even in a facility with a designated night shift lactation consultant and other structural supports for breastfeeding (Grassley et al., 2015). A recent study linked the nurse work environment to missed nursing care in labor and delivery (Lake et al., 2019). However, we found no prior studies of the relationship between missed nursing care during labor and birth and human milk feeding.

Our study has limitations, including the relatively small number of hospitals represented. Nurses in this study reported their hospitals had good adherence (78% frequently or always adherent; Simpson et al., 2019a) to the staffing guidelines expected to support human milk feeding. These two factors may have limited our power to detect an independent association between nurse staffing during labor and birth and exclusive breast milk feeding. We did not have data on other influential structural factors, such as Baby-Friendly status or existence and number of certified lactation support staff within the hospitals. Our measures of missed nursing care and nurse staffing are both self-reported by nurses and may be subject to bias. Study strengths include measures that have been specifically designed for the unique environment of labor and birth units.

Given that the adequacy of nurse staffing has consistently been associated with missed nursing care and that inadequate staffing and resources as a reason for missed care were associated with missed nursing in this study, it is reasonable to expect that nurse staffing may predict breast milk feeding in a larger sample of hospitals. We are currently engaged in a larger study to test this hypothesis. It is likely that multiple structural factors affect nurses' capacity to provide sufficient and appropriate support for successful exclusive human milk feeding. Facility culture, policies, communication, availability of resources, and nursing, midwifery, and medical staff education on the evidence base and effective practices for supporting initiation and sustainment of human milk feeding are all important. Attention to nurse staffing and missed nursing care could improve quality and public health through an effect on human milk feeding.

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Callouts

Assisting with breastfeeding by providing skin-to-skin contact immediately after birth, assisting with feeding within the first hour of life, and keeping healthy birth parents and babies together are essential maternity nursing practices.

New mothers, nurses, and physicians considered the Joint Commission exclusive breast milk feeding measure to be a nurse-sensitive outcome in our earlier research.

We evaluated the relationship between missed nursing care during labor and birth and human milk feeding outcomes.

Hospitals' exclusive breast milk feeding rates were associated with nurse-reported missed nursing care.

Reasons for missed nursing care included communication problems and inadequate staffing/resources.

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 Table 1.

 Demographic and Employment Characteristics of Nurse Survey Respondents (n=512)

Respondent Characteristic	Mean (SD) or n (%)	Range	
Age (years)	43.0 (11.7)	23 – 77	
Race/Ethnicity			
Hispanic/Latino	6 (1%)		
Asian	7 (1%)		
Hawaiian or Other Pacific Islander	1 (<1%)		
Black/African American	17 (3%)		
White/Caucasian	410 (80%)		
Decline to State, Other, Missing	71 (14%)		
Nursing Education (n=481)			
Diploma	22 (5%)		
Associate Degree	161 (33%)		
Bachelor of Science in Nursing	256 (53%)		
Graduate (Masters or Doctorate)	42 (9%)		
Years of Experience as an RN (n=478)	16.7 (12.0)	0 – 46	
<5 years	86 (18%)		
5 – 9.9 years	86 (18%)		
10 – 19.9 years	122 (26%)		
20 years	184 (38%)		
Years of Experience as Labor and Birth RN (n=475)	13.7 (11.2)	0 – 46	
<5 years	144 (30%)		
5 – 9.9 years	58 (12%)		
10 – 19.9 years	134 (28%)		
20 years	139 (29%)		
Shift Usually Worked (n=481)			
Days	255 (53%)		
Evenings	24 (5%)		
Nights	173 (34%)		
Rotating	29 (6%)		
Employment Status (n=482)			
Full-time	357 (74%)		
Part-time Part-time	125 (26%)		
Role on the Unit (n=484)			
Staff RN	324 (67%)		
Charge RN	12 (2.5%)		
Staff & Charge RN	122 (25%)		
Administrator	17 (3.5%)		
Clinical Nurse Specialist or Nurse Educator	9 (1.9%)		

 $\label{eq:Table 2.}$ Characteristics of Hospitals and their Labor and Birth Units (N = 36)

Characteristic	n (%) or mean (SD)
Type of Hospital	
Hospital district or authority	1 (3%)
Church-operated not-for-profit	2 (5%)
Other not-for-profit	32 (89%)
Corporation-owner for-profit	1 (3%)
Teaching Status ^a	29 (80.5%)
Residency training approval by Accreditation Council for Graduate Medical Education	20 (56%)
Medical school affiliation reported to American Medical Association	24 (67%)
Member of Council of Teaching Hospitals of the Association of American Medical Colleges (COTH)	4 (11%)
Birth Volume in 2016	
Mean (SD)	1967 (1723)
Median (IQR)	1637.5 (564–2556)

Note: IQR, interquartile range; SD, standard deviation;

Source: American Hospital Association 2016 Annual Survey

 $^{^{}a}$ Teaching categories not mutually exclusive

Table 3.

Unadjusted Associations with Exclusive Breast Milk Feeding Rate (n=36 Hospitals, 512 Nurses)

Variable	Descriptives	Bivariate Associations with EBMF rate B [CI ^a]	
variaut	% [range] or mean (SD)		
Exclusive Breast Milk Feeding rate	53% [13–76%]	-	
Nursing Care			
Missed Nursing Care (1–4)			
Total score (24 items)	2.47 (0.36)	-20.7 [-33.6, -8.6]	
Skin-to-Skin Mother-Baby Care Immediately After birth	2.34 (0.43)	-17.1 [-29.3, -6.3]	
Breastfeeding within 1 Hour of Birth for Women who are Breastfeeding	2.33 (0.41)	-17.9 [-30.5, -6.2]	
Recovery Care Consisting of 2 Hours of every 15-Minute Maternal Assessments and 2 Hours of every 30-Minute Newborn Assessments	2.46 (0.34)	-15.4 [-28.7, -2.1]	
Reasons for Missed Nursing Care (1–4)			
Communication Issues (factor 1)	1.93 (0.27)	-25.1 [-43.4, -6.7]	
Inadequate Staffing (factor 2)	2.57 (0.34)	-14.1 [-34.5, -3.5]	
Staffing Guideline Adherence score (1–4)	3.12 (0.43)	12.9 [3.4, 24.3]	
Birth: 2 to 1 Ratio: 1 RN Responsible for Mother; 1 RN Responsible for the Newborn Until Critical Elements Are Met	3.21 (0.52)	8.1 [-1.9, 19.0]	
Postpartum Recovery: 1 RN to 2 (1 Mother and 1 Newborn) Ratio for at Least 2 Hours Without Any Other Patient Assignments	3.16 (0.46)	9.7 [-2.2, 23.9]	
Quality of Nursing Care Delivered (1–4)	3.59 (0.26)	27.3 [6.2, 47.4]	
Respondent Characteristics			
Mean Age in Years	44.2 (5.7)	-1.15 [-2.1, -0.4]	
Mean Level of Burnout (1–5)	2.71 (0.64)	-7.7 [-17.0 , -1.5]	
% with BSN or Higher	85% [33–100%]	-1.4 [-33.0, 26.0]	
Mean Years of Labor and Birth RN Experience	14.6 (5.9)	-0.7 [-1.9, 0.1]	
Hospital/Environment Characteristics			
Birth Volume (/1000 ^b)	1.97 (1.72)	0.9 [-1.4, 2.9]	
Safety Climate Subscale of Safety Attitude Questionnaire (1–5)	4.15 (0.36)	10.7 [-3.5, 30.0]	

Note: CI, confidence interval; EBMF, exclusive breast milk feeding; SD, standard deviation. For all scales, higher scores indicate more of the measured construct. Relationships between the potential predictors and the hospital's exclusive breast milk feeding rate were estimated using bootstrapped simple regression models.

^aCI = Bootstrapped confidence interval

 $^{^{\}mbox{\it b}}_{\mbox{\footnotesize Birth volumes}}$ were divided by 1000 to better calibrate the coefficients and CIs

Table 4.

Multiple Regression Model of Overall Missed Nursing Care on Exclusive Breast Milk Feeding Rate

Variable	Descriptives	Adjusted ^a Associations with EBMF rate
variable	% [range] or mean (SD)	B [CI ^b]
Exclusive Breast Milk (EBM) feeding rate	53% [13–76%]	-
Nursing Care		
Missed Nursing care Total score (24 items; 1–4)	2.47 (0.36)	-14.6 [-26.4, -2.7]
Staffing Guideline Adherence score (1–4)	3.12 (0.43)	3.9 [-8.7, 17.7]
Quality of Nursing Care Delivered (1–4)	3.59 (0.26)	16.9 [-6.0, 38.7]
Respondent Characteristics		
Mean Age in Years	44.2 (5.7)	-0.5 [-1.3, -0.6]
Mean Level of Burnout (1–5)	2.71 (0.64)	1.7 [-8.6, 15.6]

Note: CI, confidence interval; EBMF, exclusive breast milk feeding; SD, standard deviation. For all scales, higher scores indicate more of the measured construct. Relationships between the potential predictors and the hospital's exclusive breast milk feeding rate were estimated using a bootstrapped multi-level multiple regression model.

^{al} Adjusted for the following potentially confounding factors based on their bivariate association with the hospital's exclusive breastmilk feeding rate: total staffing guideline adherence score, quality of nursing care, mean burnout score, and mean age in years.

b CI = Bootstrapped confidence interval

Table 5.

Clinical Nursing Implications

