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Postnatal unit experiences associated with exclusive breastfeeding the inpatient stay: A cross-sectional online survey

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Abstract

Background: Efforts to provide accessible and effective infant feeding support are advancing to set up new families to meeting their goals, however data continue to be limited in understanding how inpatient postpartum support and experiences contribute to exclusive breastfeeding during hospitalization.

Research aims: To identify postnatal unit experiences including skin-to-skin contact, overnight support, rooming-in, responsive clinicians, and understandable communication that correlate with early infant feeding outcomes among a sample of mothers who intended to breastfeed.

Methods: This is a cross-sectional survey study. Through secure online survey, participants submitted ($N=2,401$) responses between November 2016 to May 2017 about their experiences with maternity healthcare and offer thoughts on the postnatal unit environment. Descriptive statistics were used to examine distributions of maternal characteristics, postpartum experience, and birthing facility characteristics.

Results: Exclusive breastfeeding was positively correlated with the following postnatal unit experiences: mother did not ask that her infant be taken out of the postnatal unit room, infant staying in postnatal unit room except for treatment/s, mother got help from clinical staff when

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Conflict of Interest

Tully, Sullivan, Seashore, and Stuebe are inventors on a patented medical device, which is not discussed in the manuscript. The University of North Carolina at Chapel Hill intellectual property is licensed. Other authors have no declarations.

they needed after pressing the call button, and nurse, midwife, and/or doctor always explained information to mother in ways that they understood.

Conclusion: Postnatal unit experiences associated with exclusive breastfeeding during postpartum hospitalization were rooming in, parents who did not ask for their infant to be taken out of the unit room, whether mothers received timely help from clinical staff, and information was explained in a way they could understand.

Background

The myriad benefits of breastfeeding for parent-infant health have been well-documented. Medical organizations recommend that infants be exclusively breastfed for the first 6 months of life with continued breastfeeding with complementary foods as mutually desired (AAP, 2012; WHO, 2003). Researchers found through simulated models that increasing rates of exclusive breastfeeding would have a profound impact on a population-level health, including significant reductions in child infectious morbidity, maternal deaths, and medical costs (Bartick et al., 2017; Stuebe et al., 2017). Yet in the United States, only 58.3% of infants were breastfeeding at 6 months according to the most recent national survey (CDC, 2020). Clinicians within the hospital setting are well-positioned to set new families up to meet their breastfeeding goals, as part of safe, respectful care during the postpartum stay and the transition home.

The World Health Organization offers a guideline for birthing facilities to implement the Breastfeeding Friendly Hospital Initiative (BFHI) to protect, promote, and support breastfeeding (2017). Facilities that implement the BFHI *Ten Steps to Successful Breastfeeding* – including supporting breastfeeding initiation soon after birth, enabling rooming-in, and supporting caregiver response to infants' cues – increase breastfeeding rates in the short-term (Feldman-Winter et al., 2017; Pounds & Shostrom, 2018) and over time (Pérez-Escamilla et al., 2016). Further, independently, parent-infant skin-to-skin contact has been found to positively impact breastfeeding outcomes. According to the most recent Cochrane Review, newborns who had early skin-to-skin contact were more likely to be breastfed between one and four months postpartum (Moore et al., 2016). Mothers who room-in with their infants in the birth facility also have higher rates of breastfeeding. In an Italian study of 640 mother-infant dyads, researchers found that continuous rooming-in during the hospital stay was a protective factor for breastfeeding, which was measured in the hospital and at 15, 40, and 90 days after birth (Colombo et al., 2018). Altogether, there is likely a positive, dose-dependent relationship between the number of BFHI steps that families experience with breastfeeding outcomes (Jung, Nobari, & Whaley, 2019; Pérez-Escamilla et al., 2016).

In the United States, despite relatively high breastfeeding initiation rates and increasing BFHI implementation, early infant supplementation with formula is common. Researchers found that a national average of 19.2% of breastfeeding families used formula in the first two days of life in 2017 (CDC, 2020). The medical necessity of early infant supplementation is a topic of debate and investigation, reflecting biological, social, and structural complexity (Boban & Zakarija-Grkovi, 2016; Biggs et al., 2018). Consistent with

considerations of trade-offs with infant feeding practices, Fahey and Shenassa recommend tailored, psychosocial support for women, beyond healthcare for medical complications through their Perinatal Maternal Health Promotion Model (Fahey & Shenassa, 2013). In this framework, social support, self-efficacy, positive coping strategies, and realistic expectations are interrelated aspects of women's journeys through motherhood for safety and wellness. Fahey and Shenassa (2013) further describe optimizing maternal and mother-infant dyadic health through attention to contextual influences on outcomes, including the quality of clinical services.

Healthcare team support and information provision play a key role in shaping birthing and postpartum experiences (Tully, Stuebe, Verbiest, 2017; Verbiest et al., 2018). In research conducted by Gianni and colleagues, breastfeeding technique was a factor associated with feeding outcomes, highlighting the importance of adequate support to address latch and positioning (Gianni et al., 2019). Specifically within inpatient healthcare, interactions with clinical staff, the quality of care for mothers, the quality of care for infants, and maternal feelings about the services are ranked by mothers as either the best or worst aspects of the hospital stay, with delays in care and infant feeding experiences among the worst aspects (Edmonds, Declercq, & Sakala, 2021). Related aspects of postnatal support in the hospital are not well understood in the context of infant feeding, including whether mothers receive timely support. Additionally, whether healthcare providers explain things to mothers understandably is not known, including in relation to infant feeding. In-patient postpartum care experiences matter, but we do not yet understand the aspects which might be most important to develop or strengthen from patient perspectives.

We hypothesized that mothers who reported having had more BFHI-consistent and physically and emotionally supportive postpartum experiences would report higher rates of exclusive breastfeeding during hospitalization. The purpose of this study was to identify postnatal unit experiences including skin-to-skin contact, overnight support, rooming-in, responsive clinicians, and understandable communication that correlate with early infant feeding outcomes among a sample of mothers who intended to breastfeed.

Methods

Research Design

This study was structured as a cross-sectional online survey. This study design allowed us to investigate maternal report of their postnatal unit experiences among a large sample who self-identified as having intended to breastfeed. Ethical review was conducted by the University of North Carolina at Chapel Hill Non-Biomedical Institutional Review Board (16-2531) on October 12, 2016; the study was determined to be exempt.

Setting and Relevant Context

Participants in this sample reporting giving birth in a hospital setting within the United States. Therefore, their experiences reflect the diversity of postpartum experiences in the context of this country. In 2021, 28% of births in the United States occur in Baby-Friendly designated facilities, according to Baby Friendly USA (Baby-Friendly USA, 2021a).

Clinicians in Baby-Friendly facilities employ the *Ten Steps to Successful Breastfeeding*, practices which promote skin-to-skin contact, initiation and maintenance of breastfeeding, and rooming-in during the dyad's postnatal unit stay (Baby-Friendly USA, 2021b).

Sample

The target population of this sample were survey respondents who identified as mothers and intended to breastfeed. Participant responses were obtained through an online survey, securely administered through a software program called Qualtrics (Provo, Utah). The overall study included online questionnaire responses from 3,610 international participants from November 2016-May 2017. Participants were eligible if they were at least 18 years of age and English speaking. Participants included individuals who self-identified as mothers, partners, grandparents, a range of maternity healthcare professionals, and other roles who could inform researchers about their experiences with maternity healthcare and offer thoughts on the postnatal unit environment.

Inclusion criteria for the sample in this analysis was: participants who reported giving birth in the United States within the last five years; identified as mothers; intended to breastfeed; delivered their infant in a hospital; and spent at least postpartum one night in the birth facility. Participants were excluded from this sample if any of the following criteria were met: did not identify as mothers ($n=319$), did not report receiving maternity care in the US ($n=258$), did not report intending to breastfeed ($n=505$), did not deliver a child within the last five years ($n=131$), did not give birth in a hospital ($n=584$), and did not stay overnight in the birth facility following childbirth ($n=684$). Participants might have been excluded for one or more of these criteria. The final sample size of 2,401 participants was adequate to test the study questions, adjusting for covariates.

Participants who were interested in providing an electronic mailing address did so in a separate online survey, which was not linked to the data. Participants who provided their contact information were entered into a drawing to receive a \$40 gift card as an incentive. Five of these individuals were randomly selected for the thank you gift using a random number generator and each of them received electronic gift cards.

Measurement

The online survey included questions about participant characteristics, birthing facility settings, and maternity postpartum healthcare experiences. Demographic data measured included the following maternal characteristics: relationship status; education completed; race; ethnicity; insurance status at birth; household income in the previous year; Baby-Friendly designated facility; mode of childbirth; gestational age at birth; and whether the infant received any care in the neonatal intensive care unit.

The dependent variable for this analysis was infant feeding during postpartum hospitalization. Participants were asked, "while you were at the birthing facility, how was your baby fed?" with method response options of "at the breast," "my milk, with a bottle," "my milk, with a cup, supplemental nursing system, syringe, or other method," "using donor human milk," "using formula," or "not applicable." Respondents could select more than one option. For this analysis, response options were grouped into the infant

feeding substance categories of “formula supplementation” and “exclusive breastfeeding.” “Exclusive breastfeeding” included participants who selected any options which included mother’s own milk, and “formula supplementation” included participants who selected any options which included formula. This definition of exclusive breastfeeding is consistent with the infant feeding terms described by Labbok and Starling (2012). Participants whose infants received only donor milk in the hospital were not included in this analysis ($n=4$). Participants whose infants received donor human milk in combination with mother’s own milk or formula were included.

The independent variables for this analysis were 12 items about experiences on the postpartum unit. The senior authors developed survey items from peer-reviewed literature, clinical expertise, and maternity healthcare implementation experience. Questions about rooming-in and skin-to-skin contact were based on the CDC’s Maternity Practices in Infant Nutrition and Care (mPINC) survey. Questions about mothers’ experiences with whether their rooms were quiet at night, whether they received help when they pushed the call button, or understood how providers explained things were drawn from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCHAPS) survey.

Each of these experience variables was included to build on the breastfeeding self-efficacy literature (e.g. Brockway, Benzies, & Hayden, 2017) and structured on a two- or four-item response scale in the analysis. Covariates included participant report of their characteristics (relationship status, education completed, race, ethnicity, insurance status, household income in the previous year), context of childbirth experiences (intended feeding substance in birthing facility, mode of childbirth, gestational age at birth, neonatal intensive care utilization), and birth facility characteristics (participant report of facility being Baby-Friendly designated at the time of delivery or not). The survey is included as Appendix 1.

Data Collection

Participants were enrolled and completed the survey between November 2016-May 2017. A consent form was the first page of the online form. Participants were recruited through collaboration with social media groups and electronic list-servs maintained by the Carolina Global Breastfeeding Institute and 4th Trimester Project at the University of North Carolina at Chapel Hill and indicated informed consent electronically prior to starting the survey. Skip logic was employed so that relevant questions were posed to subgroups of participants only, including clinical practice experience for healthcare providers only. Survey data were anonymous, unlinked to any identifiable information, and stored in a secure database only accessible by IRB-approved study personnel.

Data Analysis

Descriptive statistics were used to examine distributions of study variables and to summarize participant characteristics. Bivariate associations between the dependent variable and each of the independent variables as well as each of the covariates were tested. Each support variable with a significance of $<.05$ was entered into an adjusted logistic regression model as two- or four-level variables and tested separately against the outcome. These models

were adjusted for covariates significantly associated with the dependent variable in the bivariate analysis. Lastly, a Spearman correlation matrix was generated to determine the extent to which the support variables were associated with one another. Data analyses were completed using SAS statistical software (SAS Institute Inc., Cary, NC), and the .05 level of significance was used throughout the analysis.

Results

Participants were primarily married or in a civil partnership, had completed at least some college, White, and Not Hispanic/Latina (Table 1). Bivariate analyses indicated that the following characteristics were positively associated with exclusive breastfeeding during postpartum hospitalization: vaginal childbirth, infant born at least 37 weeks gestation, infant did not receive intensive care, mother held infant skin-to-skin within and after 2 hours of birth, mother did not ask for her infant to be taken out of the postnatal unit room, infant stayed in the postnatal unit room except for treatments, mother always got help from clinical staff as soon as she wanted if after pressing the call button, and healthcare team members always explained things to mother understandably (Table 2). After adjusting for statistically significant maternal and infant characteristics, the following postnatal unit experiences remained positively associated with exclusive breastfeeding: mother did not ask that her infant be taken out of the postnatal unit room, infant stayed in the postnatal unit room except for treatment/s, mother got help from clinical staff when needed after pressing the call button, and nurse, midwife, and/or doctor always explained things to mother understandably (Table 3). Most postnatal unit experiences were correlated with each other (Table 4).

Discussion

We sought to identify mothers' experience of aspects of postnatal unit care that were associated with realization of breastfeeding intentions during the early postpartum period. Consistent with our hypothesis and in alignment with the Perinatal Maternal Health Promotion Model (Fahey & Shenassa, 2013), we found that several aspects of in-patient experiences were impactful in relation to mother-infant feeding practices, despite the privileged sample with high intention to exclusively breastfeed in mostly Baby-Friendly designated facilities.

Consistent with the literature, we found a substantial deviation from plans around exclusive breastfeeding in the days following childbirth, demonstrating the necessity to continually support women in ways that enable breastfeeding, even among a population that is already well-equipped to breastfeed. In-hospital supplementation is associated with shorter durations of breastfeeding (O'Connor et al., 2018; Schliep et al., 2019). Low and variable rates of exclusive and continued breastfeeding suggest that many mothers in the US do not meet their breastfeeding goals. It is important to work toward "concordance" of breastfeeding success from maternal perspectives (Eagen-Torkko, 2019) by establishing more supportive and inclusive postpartum clinical environments.

Inpatient breastfeeding facilitators from patient perspectives are especially critical in the context of COVID-19, as this is "a transformative moment to shift maternal care" (Gutschow

& David-Floyd, 2021). Researchers found that birthing parents experienced less early postpartum contact during inpatient care through the pandemic (Brown & Shenker, 2021; Perrine et al., 2020), which helped some establish and maintain breastfeeding while for others the reduced contact created and exacerbated infant feeding issues (Brown & Shenker, 2021). Another team of researchers who conducted a large, multi-site study of mothers who had confirmed or suspected COVID-19 found that lack of at-breast feeding, skin-to-skin contact, or rooming-in within arms' reach was associated with lower rates of exclusive breastfeeding in the first 3 months postpartum (Bartick et al., 2021). Consistent with this COVID-19 specific research, we found that whether mothers perceived that they received help from clinical staff when they needed it and felt that doctors, nurses, or midwives explained things to them in a way that they could understand was associated with exclusive breastfeeding. These aspects of inpatient care are consistent with findings from other studies where researchers have found that mothers benefit from positive emotional support from healthcare providers in the immediate postpartum period. For example, through a study of women and nurses focusing on postpartum experiences during hospitalization, researchers demonstrated that women desired more individualized attention surrounding their emotional needs (McCarter & MacLeod, 2019). Additionally, Munn et al. (2018) found that healthcare professional support, including lactation healthcare, was one of six main themes related to mothers' participation in Baby-Friendly practices and that women attributed breastfeeding success in part to physical assistance and emotional support from clinicians. Additional qualitative studies are needed to illuminate the relationship between mothers' perceptions of healthcare and infant feeding, as our results indicate that inpatient dynamics are associated with health outcomes.

Many of the healthcare experience variables were correlated with one another. It is likely that these interactions build upon one another, including in relation to the physical environment. Clinicians within postnatal units need to facilitate breastfeeding and rooming-in (WHO, 2018), promote rest and recovery, and enable the mother-infant dyad and family to feel safe. Qualitative research with diverse samples is needed for researchers to provide insights into the intricacies of these early postpartum experiences. Researchers who examined infant feeding exposure and personal experiences of African-American mothers found that participants did not realize how many feeding questions they would have until after they had begun breastfeeding (Jefferson, Bloom, & Lewis, 2021). Gray and colleagues found that early use of lactation support providers after birth resulted in higher exclusive human milk intake, but also that lactation assistance was not consistently provided for all patients (Gray et al., 2021). These findings underscore the importance of equitable lactation care, including nurses, midwives, and/or doctors providing information to all parents and tailoring education. This support might also actively include assessment of patient comprehension and self-efficacy to better address health needs. Clinicians who practice the *Ten Steps* and practices beyond that standard of healthcare, including moving from mother-infant dyadic support to triadic support that includes the father or other key companions (Crippa et al., 2021), contribute to postpartum experiences following childbirth as well as feeding outcomes for their infants. Robust patient-centered research is needed to identify what birthing parents need to feel, know, and have happen to achieve the

breastfeeding self-efficacy needed to meet their health goals as outlined in the Perinatal Maternal Health Promotion Model (Fahey & Shenassa, 2013).

Limitations

Our findings must be considered within the limitations of the study design. A majority of the participants in this sample of mothers in the United States who have birthed in hospitals identified as white, from higher-income households, and were highly educated, which almost certainly impacted their access to breastfeeding support and is not broadly representative. Mothers who are white, more highly educated, and higher-income have higher rates of breastfeeding (CDC, 2020; Chang et al., 2019; Sebastian et al., 2019) as well as greater access to maternity care in general. This study focuses on those who identified as mothers and reported that they intended to breastfeed, but we did not collect information on the strength of breastfeeding intentions, and breastfeeding intention is associated with higher rates of breastfeeding initiation and duration (Ogbo et al., 2019). Additionally, the varying length of time elapsed between delivery and study participation (up to five years) could affect how mothers felt about their intention to breastfeed, whether their infants were supplemented in the hospital, or their postpartum unit healthcare experiences.

Generalizability of findings is limited in multiple ways. Fifty-eight percent of our sample reported delivery in a Baby-Friendly designated facility, which greater than the national rate US births in Baby-Friendly designated facilities during the study period. Many of the participants experienced the highest standard of maternity healthcare, as currently defined—unlike most mothers in this country (CDC, 2020). We need to do more work to ensure that Baby-Friendly care is accessible and equitable for marginalized populations, especially because postnatal experiences can differentially have an impact on breastfeeding outcomes by patient ethnicity-race (e.g., Merewood et al., 2019).

This lack of diversity in our sample is important for many reasons, including that Baby-Friendly maternity care practices have been found to have improved breastfeeding initiation rates across ethnic and socioeconomic groups. However, more needs to be researched on which factors contribute to initiation and continuation, being that mothers' exposure to hospital practices used to improve breastfeeding may not be provided consistently across racial and ethnic groups (Sipsma et al., 2019). Hemingway and colleagues found that the racial gap in breastfeeding initiation has decreased due to BFHI efforts, but significant racial disparities remain for sustained breastfeeding for the duration of the postnatal stay (Hemingway et al., 2021). Our study findings may not be applicable to non-white mothers as care is disparate, including from the widespread impacts of systemic racism in society as a whole and specifically within healthcare (Crear-Perry et al., 2020). Recognition of healthcare service differences and perceptions must be further studied to understand how to achieve equitable care versus equal care. To accomplish this, Asiodu and colleagues recommend racially diverse research teams and listening to the perspectives of Black women, families, and communities (Asiodu, Bugg, & Palmquist, 2021). In a recent report, researchers found that hospitals can both implement evidence-based perinatal care policies and strengthen practices to specifically reduce disparities in breastfeeding initiation rates (Chiang et al., 2021).

Conclusions

Through this study on the association of postnatal unit experiences with infant feeding practices during postpartum hospitalization, we have expanded knowledge on breastfeeding facilitators and barriers. This study highlights that to achieve exclusive breastfeeding, mothers need to have both a supportive physical environment and responsive emotional support from staff during the hospital stay.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Key Messages

- Early supplementation with formula is common. Practices beyond the Ten Steps may influence breastfeeding outcomes. Responses from an online survey provide insights from mothers on their experiences of support during the postpartum stay.
- The Perinatal Maternal Health Promotion Model draws attention to the importance of clinical services that promote maternal social support, self-efficacy, positive coping strategies, and realistic expectations.
- The following postnatal unit experiences were positively associated with exclusive breastfeeding after adjusting for co-variables: mother did not ask that her infant be taken out of the room, infant stayed in the room, mother got help from clinical staff when needed after pressing the call button, and clinicians always explained things to mother understandably.
- Deviation from exclusive breastfeeding suggests a need to further strengthen systems of postpartum care to better support birthing parents and families in reaching their infant feeding goals.

Table 1.

Maternal, Infant, and Childbirth Characteristics with Bivariate Associations with Infant Feeding Substance During Postpartum Hospitalization.

	Infant Feeding During Postpartum Hospitalization			χ^2 (df)	<i>p</i>
	Total sample (n=2401)	Exclusive Mom's Milk (n=2152)	Formula Supplementation (n=249)		
Maternal characteristics	n (%)	n (%)	n (%)		
Relationship					
Married or civil partnership	2205 (91.91)	1981 (89.84)	224 (10.16)	5.60 (2)	0.078
Not married, living with partner	139 (5.79)	125 (89.93)	14 (10.07)		
Other	55 (2.29)	44 (80.00)	11 (20.00)		
Education completed					
Some college to doctorate	2303 (95.92)	2066 (89.71)	237 (10.29)	0.39 (1)	0.50
High School or less	98 (4.08)	86 (87.76)	12 (12.24)		
Race					
White	2218 (93.00)	1994 (89.90)	224 (10.10)	0.60 (1)	0.427
Other	167 (7.00)	147 (88.02)	20 (11.98)		
Ethnicity					
Hispanic/Latina	142 (5.99)	127 (89.44)	15 (10.56)	0.01 (1)	0.887
Not Hispanic/Latina	2227 (94.01)	1997 (89.67)	230 (10.33)		
Insurance status					
Insured	2349 (98.04)	2107 (89.70)	242 (10.30)	1.04 (1)	0.329
Uninsured	47 (1.96)	40 (85.11)	7 (14.89)		
Household income in the previous year					
Less than \$75,000	1035 (44.17)	927 (89.57)	108 (10.43)	0.02 (1)	0.893
\$75,000 or greater	1308 (55.83)	1169 (89.37)	139 (10.63)		
Baby-friendly designated facility					
Yes	1392 (57.98)	1251 (89.87)	141 (10.13)	0.56 (2)	0.761
No	362 (15.08)	326 (90.06)	36 (9.94)		
Unsure	647 (26.95)	575 (88.87)	72 (11.13)		
Mode of childbirth					
Cesarean section	396 (18.83)	326 (82.32)	70 (17.68)	33.19 (1)	<.001
Vaginal	1707 (81.17)	1569 (91.92)	138 (8.08)		
Gestational age at birth					
37 weeks gestation	2129 (88.86)	1926 (90.47)	203 (9.53)	15.37 (2)	0.001
34+0 to 36+6 weeks gestation	239 (9.97)	197 (82.43)	42 (17.57)		
<34 weeks gestation	28 (1.17)	24 (85.71)	4 (14.29)		
Infant received any care in the neonatal intensive care unit					
Yes	235 (9.81)	168 (71.49)	67 (28.51)	92.60 (1)	<.001
No	2161 (90.19)	1980 (91.62)	181 (8.38)		

Note. Missing value: Relationship other = Single (never married), divorced, separated, or widowed. Race other = Black; Asian; Native American, Hawaiian, or Pacific Islander; or other (please specify).

Table 2.

Maternal Report of Postnatal Unit Experiences and Bivariate Associations with Infant Feeding Substance During Postpartum Hospitalization.

Postpartum Experiences	Infant Feeding During Postpartum Hospitalization			χ^2 (df)	p
	Total sample (n=2401) n (%)	Exclusive Breastfeed (n=2152) n (%)	Formula Supplementation (n=249) n (%)		
Mother held infant skin-to-skin within 2 hours of birth					
Yes	674 (68.85)	581 (86.20)	93 (13.80)	11.03 (1)	0.001
No	305 (31.15)	237 (77.70)	68 (22.30)		
Mother held infant skin-to-skin after 2 hours postpartum					
Yes	2176 (90.78)	1959 (90.03)	217 (9.97)	4.38 (1)	0.048
No	221 (9.22)	189 (85.52)	32 (14.48)		
Mother had a support person with her overnight					
Yes	2040 (84.96)	1829 (89.66)	211 (10.34)	0.01 (1)	0.925
No	361 (15.04)	323 (89.47)	38 (10.53)		
Mother woken on the postnatal unit by clinical staff					
Yes	2026 (84.84)	1807 (89.19)	219 (10.81)	3.13 (1)	0.091
No	362 (15.16)	334 (92.27)	28 (7.73)		
Mother reported area around postnatal unit room quiet at night					
Always	929 (39.65)	846 (91.07)	83 (8.93)	6.66 (3)	0.086
Usually	985 (42.04)	874 (88.73)	111 (11.27)		
Sometimes	346 (14.77)	310 (89.60)	36 (10.40)		
Never	83 (3.54)	69 (83.13)	14 (16.87)		
Mother did not ask staff to take infant out of postnatal unit room					
Yes	1863 (78.05)	1691 (90.77)	172 (9.23)	11.38 (1)	0.001
No	524 (21.95)	449 (85.69)	75 (14.31)		
Staff offered to mother to take infant out of postnatal unit room					
Yes	859 (36.09)	758 (88.24)	101 (11.76)	3.12 (1)	0.08
No	1521 (63.91)	1377 (90.53)	144 (9.47)		
Infant stayed in postnatal unit room, except for treatments					
Yes	1934 (81.88)	1772 (91.62)	162 (8.38)	38.88 (1)	<.001
No	428 (18.12)	349 (81.54)	79 (18.46)		
Mother called staff for non-medical needs					
No	1849 (78.35)	1665 (90.05)	184 (9.95)	1.94 (3)	0.531
1 Time	200 (8.47)	179 (89.50)	21 (10.50)		
2-3 Times	238 (10.08)	208 (87.39)	30 (12.61)		
4+ Times	73 (3.09)	64 (87.67)	9 (12.33)		
Mother got help from clinical staff as soon as she wanted it, after pressing the call button					
Always	854 (39.93)	783 (91.69)	71 (8.31)	8.61 (3)	0.028
Usually	901 (42.12)	801 (88.90)	100 (11.10)		

Postpartum Experiences	Infant Feeding During Postpartum Hospitalization			χ^2 (df)	p
	Total sample (n=2401)	Exclusive Breastfeed (n=2152)	Formula Supplementation (n=249)		
	n (%)	n (%)	n (%)		
Sometimes	344 (16.08)	298 (86.63)	46 (13.37)		
Never	40 (1.87)	34 (85.00)	6 (15.00)		
Nurse/midwife explained things to mother understandably					
Always	1237 (53.69)	1141 (92.24)	96 (7.76)	27.51 (3)	<.001
Usually	824 (35.76)	727 (88.23)	97 (11.77)		
Sometimes	227 (9.85)	187 (82.38)	40 (17.62)		
Never	16 (0.69)	12 (75.00)	4 (25.00)		
Doctor explained things to mother understandably					
Always	1190 (53.63)	1097 (92.18)	93 (7.82)	25.63 (3)	<.001
Usually	768 (34.61)	677 (88.15)	91 (11.85)		
Sometimes	231 (10.41)	189 (81.82)	42 (18.18)		
Never	30 (1.35)	26 (86.67)	4 (13.33)		

Table 3. Results of Adjusted Logistic Regression Models of Associations Between Postnatal Unit Experiences and Exclusive Provision of Mother’s Own Milk During Postpartum Hospitalization.

	Adjusted Odds Ratio ^{<i>I</i>}	95% Confidence Interval	χ^2	<i>p</i>
Mother held infant skin-to-skin within 2 hours of birth	1.08	0.68, 1.74	0.11	0.74
Mother held infant skin-to-skin after 2 hours postpartum	1.02	0.65, 1.62	0.01	0.92
Mother did not ask staff to take infant out of postnatal unit room	1.84	1.31, 2.58	12.37	<.001
Infant stayed in postnatal unit room, except for treatments	1.77	1.24, 2.52	9.83	0.002
Mother got help from clinical staff as soon as she wanted it, after pressing the call button	1.29	1.06, 1.57	6.48	0.01
Nurse/midwife explained things to mother understandably	1.48	1.21, 1.81	14.64	<.001
Doctor explained things to mother understandably	1.44	1.18, 1.76	13.06	<.001

Note.

^{*I*} Covariates included in the model: mode of childbirth, infant received any care in the neonatal intensive care unit, and gestational age at birth.

Table 4. Spearman's Correlation Matrix for Maternal Support of Postnatal Unit Experiences.

	Mother held infant skin-to-skin within 2 hours of birth	Mother held infant skin-to-skin after 2 hours postpartum	Mother had a support person with her overnight	Mother woken on the postnatal unit by clinical staff	Mother reported area around postnatal unit room quiet at night	Mother did not ask staff to take infant out of postnatal unit room	Staff offered to take mother to infant out of postnatal unit room	Infant stayed in postnatal unit room, except for treatments	Mother called staff for non-medical needs	Mother got help from clinical staff as soon as she wanted it, after pressing the call button
Mother held infant skin-to-skin after 2 hours postpartum	0.23 ^{***}									
Mother had a support person with her overnight	0.02	0.06 ^{**}								
Mother woken on the postnatal unit by clinical staff	0.03	-0.03	0.03							
Mother reported area around postnatal unit room quiet at night	0.04	0.05 ^{***}	0.06 ^{**}	-0.17 ^{***}						
Mother did not ask staff to take infant out of postnatal unit room	-0.06	-0.00	0.09 ^{***}	-0.05 [*]	-0.02					
Staff offered to mother to take infant out of postnatal unit room	0.01	-0.03	0.00	0.07 ^{***}	0.02	-0.39 ^{***}				
Infant stayed in postnatal unit room, except for treatments	0.26 ^{***}	0.14 ^{***}	0.04 [*]	-0.01	0.00	0.36 ^{***}	-0.19 ^{***}			
Mother called staff for non-medical needs	0.04	0.05 [*]	-0.03	0.04	0.01	-0.08 ^{***}	0.07 ^{***}	0.02		
Mother got help from clinical staff as soon as she wanted it, after pressing the call button	0.05	0.04	0.03	-0.12 ^{***}	0.28 ^{***}	-0.01	0.02	-0.00	-0.04 [*]	
Nurse/midwife explained things to mother understandably	0.05	0.06 ^{**}	-0.04 [*]	-0.13 ^{***}	0.20 ^{***}	0.01	-0.03	0.03	-0.04 [*]	0.37 ^{***}
Doctor explained things to mother understandably	0.09 ^{**}	0.04 [*]	-0.03	-0.10 ^{***}	0.18 ^{***}	0.02	-0.02	0.07 ^{***}	-0.04 [*]	0.28 ^{***}

Note.

*** p<.001

** p<.01

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