The Influence of Education and Specialty Certification on Nurses' Intent to Support Breastfeeding Post-Birth

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ABSTRACT

Breastfeeding is something that many new mothers aspire to do, but also something that many struggle with in the days following birth. Nursing support in the hospital can make a huge difference in the success of this endeavor for many patients. It is important for nurse educators that work with the obstetric population, and the nurses that care for them, to understand what drives nurses to be supportive of patients who have recently given birth in their breastfeeding efforts. This will allow for appropriate interventions to be implemented to increase the level of support. This study seeks to determine if a relationship exists between nurses' level of education and specialty certification, and their intent to provide support to new mothers in their efforts to breastfeed their babies.

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BACKGROUND

According to the American Academy of Pediatrics (AAP, 2012), exclusive breastfeeding has been determined to be the optimal method for feeding infants up to 6 months of age. Recommendations beyond that time frame support continued breastfeeding in

conjunction with solid foods through the age of 1 year and beyond, as desired by the mother and infant. Breastfeeding is associated with a decrease in illnesses and conditions such as allergies, otitis media, respiratory and gastrointestinal tract infections, necrotizing enterocolitis, sudden infant

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death syndrome, celiac disease, inflammatory bowel disease, diabetes, and obesity (AAP, 2012).

In the beginning of 2014, The Joint Commission (TJC) added a set of core measures to the quality indicators by which hospitals are judged and accredited. The Perinatal Care Core Measures are designed to provide hospitals with guidelines that will help promote quality care for their obstetric patients. Any hospital that does more than 1,100 births per year is required to report data on certain aspects of care that affect new mothers and their neonates (TJC, 2013). One of these measures is the rate of babies who are exclusively breastfeeding at discharge. In 2011, 19.4% of breastfeeding newborns received breast milk supplementation within the first 2 days of life (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [USDHHS], 2015). The goal set forth by *Healthy People 2020* (USDHHS, 2015), is to lower that rate to 14.2% by the year 2020.

While a decline in the supplementation rate has been noted over the last few years for which data is available, the amount of supplementation offered to new mothers while in the hospital for birth remains too high to be compliant with the *Healthy People 2020* benchmarks (USDHHS, 2015). In 2011, the last year for which data was provided, the supplementation rate still exceeded the goal of *Healthy People 2020* (USDHHS, 2015). While there are many factors that could potentially contribute to this level of improvement, this study focused on the educational level and attainment of specialty certification by nurses, and how those affect the intent of nurses to provide support to new mothers who have chosen to breastfeed their babies. The aim of this study was to determine if a correlation exists between nurses' level of education and specialty certification, and their intent to provide support to new mothers in their quest to breastfeed their babies.

REVIEW OF THE LITERATURE

In reviewing the literature that exists about the relationship of nurses with specialty certification and improved quality outcomes, at present, a true link

has not been established between these two variables. Boyle et al. (2014) attempted to establish a link between direct care specialty nurse certification and the surgical patient outcomes of central line associated bloodstream infections, catheter associated urinary tract infections, hospital acquired pressure ulcers, and unit acquired pressure ulcers. The study included perioperative units, surgical units, and surgical intensive care units. There was no across the board consistency noted regarding quality indicators. Rates of central line infections were significantly lower in units with higher proportions of certified nurses, but pressure ulcers were more frequent in those units.

In searching the literature specifically for articles related to nursing specialty certification and breastfeeding, no articles were returned. The National Certification Corporation (NCC) is the body that awards many of the certifications related to obstetrical nursing, and have done so since 1975 (NCC, 2019). Since its inception, The NCC has awarded 98,861 certifications in inpatient obstetric nursing, low-risk neonatal nursing, maternal-newborn nursing, and neonatal intensive care nursing (NCC, 2019). Also, there are currently 17,389 Board Certified Lactation Consultants in the United States (International Board of Lactation Consultant Examiners, 2019). This credential is maintained by the International Board of Lactation Consultant Examiners. With these numbers of certified nurses, there should be some data being collected to link outcomes to certification in this population of nurses. This paucity of literature indicates there is need for research in the maternal/child health patient population. As nurses that care for these patients try and move toward the goals set out by TJC and *Healthy People 2020*, the best way to utilize resources to achieve the best outcomes must be identified.

In a study of 50 nurses, Bernaix (2000) demonstrated that knowledge and attitude about breastfeeding is more predictive of level of support than their intent to provide it. The Nursing Support for Breastfeeding Questionnaire (NSBQ), as well as breastfeeding knowledge from the Lewinski Breastfeeding Survey Tool (BST) were utilized to measure both knowledge and attitude regarding breastfeeding. Analysis of this data demonstrates that although supportive behavior regarding breastfeeding was influenced by social pressures and attitudes, the best indicator of supportive behavior was the nurse's knowledge of breastfeeding. Bernaix et al. (2010) demonstrated that nursing education can make a difference in nurses' attitudes regarding breastfeeding. The NSQB

and the Breastfeeding Comprehensive Knowledge Survey (BCKS) was administered to 240 nurses, with 206 in the experimental group and 34 in the control group. Education was provided to the experimental group. The education consisted of 10 self-study modules that had to do with all aspects of breastfeeding. These were completed over 4–6 weeks. After the education was completed, the NSBQ and the BCKS were administered again to both the control and the experimental group to determine if the group that had the educational intervention measured a higher level of support for breastfeeding mothers. Findings suggest that this method of education was successful to improve nurses' knowledge, attitudes, and beliefs, to provide increased levels of support to new mothers.

Grassley et al. (2015) discuss how the culture of a particular unit, as well as the shift worked can play an important part in influencing nurses' priorities and attitudes about providing support to new mothers in breastfeeding. The researchers collected data using an institutional ethnography design at a tertiary care center in a western state. The study had 16 participants and data was collected through focus groups, observations, and individual and group interviews. Data was collected from the night shift nurses over several sessions and analyzed by assigning responses to one of three themes: competing priorities, incongruent expectations, and influential institutional structures. The study concluded that night shift nurses have particular sets of issues that challenge their ability to be wholly supportive of their breastfeeding patients. Strategies are needed to be put in place to help deal with these issues to increase support for breastfeeding, especially during night hours.

A study by Bozzette and Posner (2013) discusses a pilot program that was implemented at a major university regarding the introduction of specific breastfeeding education into the obstetrical curriculum. In utilizing a pre/posttest evaluation, it was determined that providing students with that additional, specialized content education, along with provision of additional resources, made a significant difference in their knowledge on breastfeeding. Twenty-four out of a possible 30 students completed both the pre and posttest. Pretest scores ranged from 9 to 17 ($n = 24$, $m = 13.08$, $SD = 2.26$). Posttest scores ranged from 12 to 20 ($n = 24$, $m = 16.79$, $SD = 1.64$). A student's t test for related samples was performed on the pre- and posttest scores of the 24 students in attendance for both tests. The breastfeeding education program was statistically significant in increasing breastfeed-

Study results indicated that neither RN educational level nor possession of specialty certification was found to be a significant factor in predicting the level of support nurses intended to offer to newly delivered mothers in their breastfeeding efforts.

ing knowledge scores ($t = -7.29$, $p < .005$, $r^2 = .696$). (Bozzette & Posner, 2013). Providing this additional education within the BSN program increased students' knowledge regarding breastfeeding and may allow them to be more supportive of patients expressing a desire to breastfeed their babies

Davis and Sherrod (2015) also examined the effects of an educational intervention on Bachelor of Science in Nursing (BSN) students' knowledge and attitude regarding breastfeeding and providing support to breastfeeding mothers. Their study included a sample of 113 nursing students in a traditional BSN program, over a 2-year period, at a nursing school in the southeast United States. A randomized pre and posttest design survey with a comparison group was used for this study. A pretest measuring knowledge and attitudes about breastfeeding was provided to all students participating in the study. An educational intervention was provided to all students and then participants were randomized to either a simulation scenario dealing with helping a breastfeeding mother (experimental group), or to watch a video regarding assisting a mother with breastfeeding (control group). After the interventions, students took the posttest and results were analyzed with a paired t test. A major flaw in this study is that the posttest analysis does not differentiate scores of the control group versus those of the experimental group. Analysis was done solely based on the evidence-based intervention in the classroom setting that was offered to all students. The study found that the intervention made a statistically significant difference in participant scores, but as analyzed, it is impossible to determine what, if any, difference the simulation or video experience had on participant scores. The study was limited to BSN students and did not address students from other types of nursing programs.

In Bernaix's et al. study (2008) it has been observed that specific education around lactation did have a positive impact around the support and education the nurse was willing to provide to mothers in the neonatal intensive care unit (NICU). As there is no specific literature that addresses the differences of level of support for breastfeeding when

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nurses have additional education and specialty certification, it would be helpful to have data to examine the relationship of these variables to improved outcomes for breastfeeding. This study was designed and conducted with these deficits in the literature in mind.

METHOD

Design

This was a quantitative study that was conducted using a descriptive comparative survey design. Collaboration was achieved for this study between a university and a health-care system. Ethical consideration was submitted to the participating university and health system Institutional Review Boards and was determined to be exempt by both organizations.

Instrument

After obtaining permission from the author, a modified version of the NSBQ (Bernaix, 2000) was used to collect the data for this study. This instrument was designed to collect information on nurses' intentions to provide breastfeeding support, their attitudes about breastfeeding, their behavioral beliefs, and evaluative information about those behavioral beliefs. Four of the original seven subscales were utilized for a total of 51 questions. The questions were scored on a Likert-type scale, and respondents were able to rate their answers on a scale of one through seven. The lower the score, the less supportive the attitudes and behaviors held by the participants were. Higher scores indicated more supportive attitudes and behaviors. This tool is a descriptive measure of nurses' attitudes, subjective norms, and behavioral intentions regarding supporting new mothers in their breastfeeding experiences (L. Bernaix, personal communication, March 30, 2015).

The intention subscale was measured by three items and has a reported Cronbach's alpha of .853. Nurses were asked to rate their intention to provide breastfeeding mothers with informational, emotional, and technical support. The attitude subscale was measured by eight items and has a reported Cronbach's alpha of .712. This measured nurses' attitudes related to providing support to breastfeeding mothers. The behavioral belief subscale was

measured by 20 items and has a reported Cronbach's alpha of .91. The evaluation of the behavioral belief outcome subscale was measured by 20 items and has a reported Cronbach's alpha of .85. The higher the score on these two subscales, the more the nurse believes that providing breastfeeding support leads to mostly positive outcomes and that the nurse would be more likely to have a positive attitude about that behavior (Bernaix, 2000). The calculated Cronbach's alpha for the scales that were utilized in this study was .88, which notes a high degree of reliability.

Nine demographic questions were also included. These questions collected information about the survey sample and included characteristics such as age, race, years of maternal-child health experience, highest educational level completed, specialty certification status, home unit, hospital of employment, and hours worked per week. Nurses were also asked whether they had completed the Breastfeeding Friendly Consortium's (BFC) Breastfeeding Training Course, which is the approved educational platform for breastfeeding education to nurses by this health system. This course meets the criteria for the Baby Friendly training that is required of nurses at facilities seeking Baby-Friendly designation.

Setting

The study was conducted in four hospitals, including one with Baby-Friendly USA designation as a Baby-Friendly facility, within a multihospital system in the Washington, DC region. Births per year at these four hospitals ranged from 2,500 to 11,000.

Participants

A convenience sample of 291 nurses from the maternal-child nursing units from each of the four hospitals were recruited to participate in the research study. Inclusion criteria were having at least 2 years of maternal/child health nursing experience, working greater than 20 hours per week, and identifying the home unit as labor and delivery, mother/baby, antepartum, or NICU.

Data Collection

The survey was administered from July 31, 2017 through September 4, 2017. This was a voluntary survey that took approximately 7–10 minutes to complete. Nurses had the option of taking the survey online or on paper. Nurses were provided with paper surveys or a link to the survey if chosen to complete electronically. The completed paper surveys were secured in a locked collection box on the units to preserve the integrity of the surveys. Specific writ-

ten instructions were attached to the paper surveys and were included on the Web-based survey as well. Access to the survey in both formats was provided on a rolling basis to the hospitals, to maximize recruitment at each hospital by members of the research team.

Data Analysis

SPSS version 23 was used for data analyses. Descriptive statistics were performed to examine the demographic variables. Mean, standard deviation, and range are reported for continuous variables while frequency and percentage were reported for categorical variables. Cronbach's alpha was used to assess the reliability of the subscales and total scale. Mean total scale scores were constructed and used for analyses. Differences in the mean scores between nurses who have specialty certification and those who do not were analyzed utilizing an independent samples *t* test. This method was also used for comparison of the means between nurses who had taken the BFC Breastfeeding Training Course and those who had not. Analysis of variance (ANOVA) was used to compare the means among the different types of certification, the different levels of nursing education, and the mean scores between hospitals. For all analyses, the alpha was set at .05.

RESULTS

Of the surveys collected, 291, or 67% met the inclusion criteria. Most of the nurses in the study were older than 35 years, with more than 10 years' experience. Most nurses had a BSN degree or higher, and the majority of nurses had specialty certification. Specialty certification was defined as holding one of the certifications provided by the NCC (2018). These included inpatient obstetrics (OB), neonatal intensive care nursing, low-risk neonatal nursing, and maternal-newborn nursing. Nurses could also indicate if they were an International Board Certified Lactation Consultant or a Certified Lactation Counselor. Some nurses identified themselves as having another type of certification related to this patient population that fell outside of these parameters. A majority of nurses had taken the BFC's Breastfeeding Training Course. A majority of the respondents worked full time. The nurses in the study worked at four different hospitals in different specialty areas—labor and delivery, family-centered care, neonatal intensive care, and high-risk perinatal. The demographic information for the participants is listed in Table 1.

An independent samples *t* test was used to compare nurses with specialty certification versus those without certification on the subscales of the NSBQ. Mean scores for those with and without certification was 5.83 and 5.85, respectively, $t = 0.186$, $p = .853$. This does not demonstrate a statistically significant difference between these two groups. However, even though the possession of certification in and of itself was not determined to be a statistically significant predictor of the level of support nurses intended to provide, certain certifications were significantly more supportive than others. To compare different certifications, we aggregated certification into five categories: (a) inpatient OB, (b) neonatal (neonatal intensive care and low-risk neonatal), (c) maternal-newborn, (d) lactation (IBCLC and lactation counselor), and (e) other. The means are summarized in Table 2. ANOVA showed that there are significant differences among the groups, $F_{4,164} = 5.43$, $p < .001$. Post hoc test using Scheffe showed that there was significant difference between inpatient OB and maternal newborn ($p = .041$), inpatient OB and lactation ($p = .003$). The rest were not statistically significant.

An ANOVA was used to compare the mean support scores between the different levels of education held by the nurses participating in the study. The mean score for those with an associate degree, a diploma degree, a bachelor's degree, and a master's degree was 5.89, 5.80, 5.78, and 6.17, respectively on seven-point scale. $F = 2.569$, $p = .055$. This also, does not demonstrate a statistically significant difference between the groups.

An independent samples *t* test was performed to compare the mean support scores between those nurses who had taken the BFC's Breastfeeding Training Course and those who had not. The mean scores for those who had taken the training and those who had not were 5.94 and 5.65, respectively, $t = 3.272$ and $p = .001$. This indicates a statistically significant difference between those two groups of nurses.

An ANOVA was also performed to compare the mean support scores between the four facilities that participated in the study. An attempt was made to determine if the hospital in the system that was Baby-Friendly (Hospital 1) had a statistically significant difference in its mean support score than those that were not Baby-Friendly. Hospital 1 through 4 had mean support scores of 6.0334, 5.7591, 5.8662, and 5.8103, respectively. $F = 1.674$, $p = .173$. While the Baby-Friendly hospital did have a higher mean support score than the other facilities, that difference was not determined to be statistically significant.

TABLE 1
Demographics (*N* = 291)

Characteristic	%	<i>n</i>
Educational level		
Associates	12	35
Diploma	5.2	15
Bachelor's	71.8	209
Master's	10.7	31
Not reported	0.3	1
Received online breastfeeding education through BFC		
Yes	64.3	187
No	35.4	103
Not reported	0.3	1
Certification status		
Yes	58.1	169
No	40.9	119
Not reported	1.0	3
Maternal newborn nursing experience (years)		
2 to <10	45	131
10 to <20	27.5	80
20 to <30	10.3	30
30 or more	17.2	50
Age (years)		
18 to < 25	1.4	4
25 to <35	31.6	92
35 to <45	24.1	70
45 and older	41.6	121
Not reported	1.3	4
Race		
White	72.9	212
African American	8.2	24
Hispanic	4.5	13
Asian	7.2	21
Employment status		
Full time	73.9	215
Part time	26.1	76
Home unit		
Labor and delivery	28.5	83
Family-centered care	36.8	107
Neonatal ICU	30.9	90
High-risk perinatal	3.8	11
Facility		
Hospital 1	17.6	51
Hospital 2	38.8	112
Hospital 3	22.8	66
Hospital 4	20.4	59
Not reported	0.4	3

The characteristics of the sample and their relationship to nurses' intent to provide breastfeeding support are detailed in Table 3.

DISCUSSION

Study results indicated that neither RN educational level nor possession of specialty certification was found to be a significant factor in predicting the level of support nurses intended to offer to newly birthed mothers in their breastfeeding efforts. However, nurses completing targeted, specific breastfeeding education from the BFC reported a higher level of intent to help their patients with breastfeeding efforts. This variable was found to be statistically significant ($p = .001$). The breastfeeding education modules that were completed are available online through the BFC (2018). Siggia and Rosenberg (2014) conducted a performance improvement initiative at a large, academic medical center that was on the Baby-Friendly USA pathway. They found that providing specific and targeted breastfeeding education to perinatal nurses increased rates of exclusive breastfeeding. Over a 3-month period, targeted breastfeeding education was provided to these nurses and the rate of exclusive breastfeeding at that facility rose from 38.55% before the education was provided, to 53.5% after the education was provided. While this project does not examine the same variables as this study, it does support the benefits of targeted breastfeeding education.

Nurses completing the training are provided critical content that addresses the importance of breastfeeding. The value of the course is its pragmatic approach in providing nurses with specific information needed to educate mothers about the benefits of breastfeeding to them and their infants. It consists of 34 modules that cover current trends in infant feeding, prenatal nutrition and breastfeeding education, labor, birth, and the immediate postpartum period, preterm and late preterm infants, The Baby-Friendly Hospital Initiative, and feeding the older infant and young child (BFC, 2018).

Nurses caring for mothers who have recently given birth have difficulty supporting this vulnerable population of patients who are exhausted and do not see or feel that they are adequately nourishing their newborns. Nurses who possess evidence-based breastfeeding education and skills are well suited to provide evidence-based information and encouragement to help mothers reach their breastfeeding goals.

TABLE 2

Mean Support Scores by Certification

	<i>N</i>	<i>M</i>	<i>SD</i>
Inpatient OB	32	5.4578	1.16170
Neonatal	54	5.7065	.60995
Maternal–newborn	25	6.0811	.64156
Lactation	23	6.2662	.43330
Other/not recorded	35	5.9427	.57042
Total	169	5.8374	.76874

Note. $F_{4,164} = 5.43, p < .001$; Post hoc analyses: Inpatient OB was significantly different from maternal–newborn ($p = .041$) and lactation ($p = .003$).

TABLE 3

Bivariate Association Between Nurses' Background and Nursing Support for Breastfeeding (NSBQ) (*N* = 291)

Variable	Mean Support Score of NSBQ	Statistics, <i>p</i> Value
Educational level		$F = 2.569, p = .055$
Associate degree	5.8941	
Diploma degree	5.8054	
Bachelor's degree	5.7863	
Master's degree	6.1764	
Certification status		$t = 0.186, p = .853$
Yes	5.8374	
No	5.8538	
Breastfeeding training course		$t = 3.272, p = .001$
Yes	5.9463	
No	5.6544	
Facility (*Denotes Baby-Friendly designation)		$F = 1.674, p = .173$
Hospital 1 ^a	6.0334	
Hospital 2	5.7591	
Hospital 3	5.8662	
Hospital 4	5.8103	

Note. Significant result is bolded.

^a A Baby Friendly Hospital Designation for Hospital 1.

IMPLICATIONS FOR PRACTICE

Hospitals that are Baby-Friendly designated or in the process, have a requirement for all staff to have a minimum of 15 hours of didactic breastfeeding education and 5 hours hands on lactation skills training. Thus, all staff members in these facilities have extra training about breastfeeding support regardless of their education or certification. It would be beneficial, based on the results of this study, to provide this targeted education to all nurses caring for this population of patients, regardless of whether they work in a Baby-Friendly facility. Implementation of the Breastfeeding Training Course provided by the BFC (2018), would be a way to ensure that this education was provided in a uniform and consistent manner. This would enable nurses to provide not only emotional

support but informational and technical support as well.

It is well documented that proper implementation of the Ten Steps to Successful Breastfeeding increases exclusive breastfeeding rates (Cardaci, 2017). Hospital leadership support for full implementation and policy adherence is essential to achieve the Baby-Friendly Hospital designation (Cunningham et al., 2018). Policies should be written around the support and implementation of the Ten Steps of Successful Breastfeeding, even for hospitals who are not pursuing Baby-Friendly Hospital designation. Regular and routine formal online breastfeeding education can provide a solid foundation to better enable the bedside nurse to assist and support new mothers in meeting their infant feeding goal.

The results of this study also have implications for nurse managers from an allocation of educational resources standpoint. Knowing that the evidence demonstrates the value of targeted breastfeeding education, the study results can help inform key budget decisions related to professional education. Completing this education in an online platform has several practical benefits to both the staff, as well as the institution. As nurses learn in different ways, at different paces, providing breastfeeding education in this way allows the learner to go at his/her own pace when reviewing the information. It provides the same opportunity to receive the desired education to all nurses, regardless of shift worked or employment status, as the online platform is always accessible. This also helps to cut down on cost to deliver the education, as nurses can complete it while at work, without having to decide to come in on days off to attend in person education sessions. In the case of new nurses, it can be offered at the point during the orientation where the preceptor and nurse feel it would be most beneficial. In choosing a particular platform to provide this very important education, it sends a clear message to nurses regarding the information that the organization feels is important for them to have, in order to provide the most effective breastfeeding assistance and education to patients. There is uniformity to the education provided.

LIMITATIONS

A convenience sample was used in this study. Nurses who self-selected to participate in the study, may not be representative of the larger nursing community. The sample was obtained from an urban health-care system, in one of the most highly educated and wealthiest regions of the nation. The average household income in 2017 was \$121,133 in the county where three of the hospitals are located United States Department of Commerce, Census Bureau (n.d.). The majority (61.1%) of adults over 25 years in the region have a bachelor's degree or higher education. The fourth hospital is in another county in which the majority (60.8%) of adults over 25 have at least a bachelor's degree and the average household income was \$136,268 United States Department of Commerce, Census Bureau (n.d.). Thus, due to the nature of the sample, the results may not be generalizable to other geographic areas of the country.

Over 80% of nurses in this sample had a BSN or greater. This may not be representative of the population of nurses in other health-care systems or other

parts of the nation. The variable of specialty certification included eight choices. Nurses were able to choose more than one, if they hold more than one certification, which may have skewed the results. Also, about certification, the IBCLC certification is the gold standard for certifying lactation consultants globally. Nurses who function as lactation consultants across the hospitals in this health system are required to hold this certification. One could infer that these nurses would have a higher level of intent to support their patients with breastfeeding, however, this information was not obtained from the study.

The data was reflective of one period. Results may change over the course of time as additional educational programming is made available, staffing levels change, and priorities in the clinical setting shift.

Another limitation of this study was that nurses' personal breastfeeding experiences were not controlled or accounted for. Even though the relationship of educational level and specialty certification status to nurses' support for breastfeeding was what was being studied, there is no doubt that personal experiences play heavily into nurses' interactions with their patients. In future studies, that should be considered when collecting and analyzing data on this type of relationship.

CONCLUSION

In this study neither the educational level nor specialty certification status was found to have an impact on a nurse's intent to assist mothers with breastfeeding. Certain classifications of certification were found to be statistically more supportive, though, in comparison to each other. However, a statistically significant relationship was found when nurses completed an online, targeted breastfeeding course. Recommendations are therefore made to provide targeted breastfeeding education to all nurses responsible for the care of newly delivered mothers and their newborns. Further studies identifying the efficacy of various teaching modes to mothers should be considered. Additional research to measure the duration of exclusive breastfeeding based on the level of education and support that patients receive from nurses during their hospitalization would validate this recommendation. Lastly, a study to measure breastfeeding rates throughout the first year of life because of additional education and assistance after delivery would be valuable and align with the *Healthy People 2020* goals.

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