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Assessing Barriers to Implement Birth Kangaroo Care in Kentucky Birthing Hospitals

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Abstract

Introduction: Kentucky continues to have one of the lowest state breastfeeding rates in the country. In 2014, the majority of the birthing hospitals in Kentucky implemented a practice change to the healthcare model known as Birth Kangaroo Care (BKC) as an effort to increase breastfeeding initiation. The goal of this study was to identify current practices and barriers to implementing BKC.

Methods: An evaluation/surveillance study that incorporated an Internet survey to collect information about the practices and policies of BKC in birthing hospitals in Kentucky was completed.

Findings: The response rate was 54% ($n = 25$). The birthing hospitals responders to the survey (84%) reported that a BKC policy was established after the educational intervention. Data identified two perceived barriers regarding uninterrupted BKC. One barrier was the interruption by family members to hold the newborn, and the second was a delay in BKC for medical evaluations of the baby by staff members.

Conclusion: Breastfeeding rates after implementation of the BKC policy in Kentucky birthing hospitals showed a statistically significant ($p = .02$) improvement of “ever breastfed” infants.

Keywords

Birth Kangaroo Care; skin-to-skin; breastfeeding; birthing hospitals; Kentucky

Introduction

Kentucky continues to have one of the lowest state breastfeeding rates in the country. According to the most recent report from the Center for Disease Control and Prevention (CDC), the rate of mothers in Kentucky that have ever breastfed is 73.9%, compared to the U.S. national rate of 83.2% (CDC, 2018). Early initiation of breastfeeding is a key point to the success of breastfeeding. Women that initiate breastfeeding during the first hours after giving birth are more likely to continue breastfeeding for longer time (Linares, Rayens, Dozier, Wiggins, & Dignan, 2015; Meedya, Fahy, Yoxall, & Parratt, 2014).

One hospital practice associated with early initiation of breastfeeding is Birth Kangaroo Care (BKC) and is defined as the placement of the naked infant (diaper only) on the mother's bare skin chest immediately at birth until after the first feeding is complete (Holmes, McLeod, & Bunik, 2013). BKC provides many advantages for the baby including a significant association with higher initiation and maintenance of breastfeeding (Aghdas, Talat, & Sepideh, 2014; Cleveland et al., 2017; Sharma, 2016). Placing the baby skin-to-skin with the mother is associated with less infant crying, calms the baby, regulate baby's heartbeat, temperature, blood glucose, and stimulates the infant to seek the breast (Moore, Bergman, Anderson, & Medley, 2016; UNICEF, 2012).

Evidence shows that BKC is also adventitious for mothers. Mothers who held their infants skin-to-skin displayed less anxiety and pain post-birth than those who were separated from their infants (Cooijmans, Beijers, Rovers, & de Weerth, 2017; Moore et al., 2016). Breastfeeding during skin-to-skin contact stimulates the secretion of hormones that promote maternal attachment to the infant (Moore et al., 2016; Morelius, Ortenstrand, Theodorsson, & Frostell, 2015). Additionally, mothers that practices skin-to-skin contact have reduced depression symptoms and physiological stress (Bigelow, Power, MacLellan-Peters, Alex, & McDonald, 2012; Cooijmans et al., 2017).

In 1991, UNICEF launched an international program with the World Health Organization (WHO) called the Baby-Friendly Hospital Initiative (BFHI) to ensure that all maternity settings became centers of breastfeeding (UNICEF, 2012). The BFHI *Guideline and Evaluation Criteria* promotes the implementation of ten steps with the core intent to protect, promote, and support breastfeeding in birthing hospital (Baby Friendly USA, 2016) One of the key clinical practices discussed in the BFHI guidelines is step #4 *'Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth'* (Baby Friendly USA, 2016).

Researchers have found that implementing BKC at birth could be far from optimal; some identified barriers that enable the adequate implementation and could challenge the health system included lack of personal, time constraints, safety concern, interfering with clinical routines, among others (Alenchery et al., 2018).

BKC initiative in Kentucky.

On average, there are 54,000 births per year in Kentucky, and yet despite efforts focused on improvement and support, breastfeeding rates in Kentucky are sub-optimal (Center for

Disease Control and Prevention, 2018; Kentucky State Data Center, 2017). In 2007, the University of Louisville Hospital (ULH) Center for Women and Infants began offering BKC for all healthy full-term infants as a quality improvement initiative with the specific goal to increase the breastfeeding initiation rates by 6% over six months. They achieved this goal in the first month after implementation (Kentucky.gov, 2011). The breastfeeding rates continued to climb as the new practice took hold with staff and providers. Grant funds were offered to ULH (Improved Health Outcomes Program (IHOP), 2009) to develop and provide detailed instructions to replicate this quality improvement project in order to help other area hospitals increase breastfeeding initiation rates. The program was called “Jumping into Kangaroo Care,” and seven Louisville area hospitals participated in the pilot program (Barbier, 2010). Based on the rising breastfeeding rates of these seven hospitals, the Special Supplemental Nutritional for Women, Infants, and Children (WIC) program partnered with ULH to offer this same training program on BKC to the remaining KY birthing hospitals (Commonwealth of Kentucky Department for Public Health, 2011/2012). Nine “train the trainer” workshops were conducted throughout the state from 2011 to 2012 (Kentucky.gov, 2011, 2012). Central to the workshop was the provision and instruction for using the “Jumping into Kangaroo Care” toolkit comprised of a training DVD, an instructor manual, and support materials such as unit policies and patient education handouts to help hospitals quickly establish BKC (Barbier, 2010). The content of the 6-hour workshop focused on the evidence of BKC, competency demonstrations by participants, barriers to implementation, and individualized plans for speedy implementation. All 46 (100%) birthing hospitals in Kentucky received the training and planned to implement BKC in the labor and mother/baby units (Kentucky.gov, 2012). The purpose of this study was to collect and evaluate data to determine the dissemination and implementation of BKC practices and policies among birthing hospitals in Kentucky.

The specific aims were:

1. To examine the practices of BKC in the birthing hospitals around the state of Kentucky;
2. To identify barriers within the birthing hospitals in the implementation of BKC;
3. To identify resources and strategies needed to improve implementation of BKC in the birthing hospitals in Kentucky.
4. To evaluate rates of breastfeeding initiation among birthing hospitals using BKC statewide.

Methods

This study was an evaluation/surveillance study that incorporated an internet survey to collect information about practices and policies of BKC in birthing hospitals in Kentucky. This protocol was in collaboration with the Kentucky Hospital Association (KHA), and the University of Kentucky. IRB approval was given by University of Kentucky.

Sampling.

All the commonwealth birthing hospitals registered in the KHA (N=46) were invited to participate in this surveillance. The response rate was 54% (n=25). The Director of the KHA, Quality and Patient Safety section contacted all the birthing hospitals in Kentucky and invited them via an email to participate. The email was directed to the primary nurse manager of the birthing units and requested to answer the survey to the best of her/his knowledge. Furthermore, the email included an invitation to voluntarily participate with the brief explanation of the study, notification on the terms of informed consent, and the link with the internet research survey. Participants were informed that by clicking on the survey link, they were consenting to participate. Additionally, participants received a code identification number when they opened the link. This number allowed them to re-enter the survey if needed.

Procedures.

The research survey link was developed using the REDCap platform from Clinical Center for Translational Science, University of Kentucky. Reminders of the survey were emailed by the KHA every three weeks for a total of three times to maximize response rate. The survey was closed after nine weeks (Nov 2015).

Instrumentation.

The research team developed an internet-based survey to collect information about the practices and policies of BKC at birthing hospitals in Kentucky based in the “Jumping into Kangaroo Care” toolkit. The survey was reviewed for “content validity” independently by the County Breastfeeding Coordinator and Nurse Director of the KHA, Quality and Patient Safety. The final Internet-survey included 26 questions with sections regarding general demographic characteristics, characteristics of trainees representing the birthing hospital, hospital, support received to implement BKC, availability of lactation consultant support in the units, and procedures associated with the practices of BKC. Local information on breastfeeding rates from 2014 and 2015 was also requested to the responders, including how did they collect this information (mother admission vs. infant chart review).

Data Analysis.

Descriptive statistics, including means and standard deviations or frequency distributions, were used to summarize demographic characteristics, identify barriers to implement BKC, and list procedures performed by the participating birthing hospitals. Independent group two-sample *T-test* were used to compare breastfeeding rates outcomes among birthing hospitals during 2014 versus 2015.

Results

The unit director/manager of birthing hospitals (72%) completed the majority of the survey responses. Staff nurses or lactation educators completed the remaining surveys. Birthing hospitals from all geographical areas of Kentucky completed the survey (Figure 1). A little over half of the birthing hospitals reported that the hospital administration assigned a specific person to lead the implementation of BKC, and most stated they had a written

policy on BKC. However, most of the birthing hospitals did not assign a budget to implement BKC in the units (Figure 2).

The majority of the hospitals (84%) reported that they trained health care staff using the “Jumping into Kangaroo Care Toolkit” that they received in the workshop. Most nurses in Labor and Delivery units and nurses in the Mother/Baby units were trained; however, only 24% of birthing hospitals prepared other professionals such as pediatricians, obstetricians (OBGYN), and other nursing personnel using the toolkit (Table 1).

Practices of BKC in birthing hospitals.

All the birthing hospitals participating in the survey reported offering BKC to 100% of uncomplicated vaginal births. The majority of birthing hospitals (96%) reported placing the infant within the first five minutes after birth on the mother’s chest. Reasons for not placing eligible infants in BKC were mother’s choices (68%), medical emergencies (64%), physicians’ choice (8%), or because other procedures were needed (4%).

Most of the birthing hospitals reported performing the following procedures while the infant is on mother’s chest: drying the infant (92%), diapering the infant (76%), placing a cap on the infant’s head (92%), and covering infant with a warm blanket (96%). Additionally, Apgar scores were assigned while the infant was on mother’s chest (92%), vital signs were assessed (92%), vitamin K was injected (56%), and eye prophylaxis was placed (60%). After birth, procedures for healthy infants were performed regularly in the mothers’ room in 64% of the birthing hospitals. The remaining birthing hospitals reported keeping infants in nurseries and bringing the infant to their mother for food or to sleep.

Barriers to uninterrupted BKC.

Uninterrupted BKC for one to two hours was reported by 88% of the birthing hospitals. Family members and physicians caused the most interruptions during BKC (Figure 3). In fact, “family members wanting to hold the baby” was identified as the most prevalent barrier restricting mothers from keeping their infant skin-to-skin.

Resources and strategies needed to implement BKC.

More tools including flyers and education material to train patient and their family were mentioned as the strategy needed to improve BKC implementation by 38% of the birthing hospitals. Additionally, 28% mentioned that including training to the physician such as pediatricians, and OB will improve the implementation of BKC in their units. In general, it was a generalized concern about how often family members were interrupting skin-to-skin contact because they did not understand the importance and advantages of BKC.

Breastfeeding assessment.

The majority of the birthing hospitals reported assessing the first breastfeeding at the mothers’ chest (96%). Of the birthing hospitals assessed, 68% reported providing lactation consultation support to mothers in the mother/baby units. The support was provided by an International Board Certified Lactation Consultant (IBCLC), by a Certified Lactation

Counselor (CLC), or by the staff nurse. The support was available more frequently during day shift in comparison to the night shift (100% vs. 56% respectively).

Most of the birthing hospitals reported breastfeeding rates based on infant feeding records taken from the medical chart. The mean of breastfeeding rates reported by the nurse managers among birthing hospitals showed a significant difference ($p = .02$) between the years 2014 compared with 2015. The breastfeeding rate in 2015 was 4% higher than in 2014 (Table 2).

Discussion and Implications for Practices

This study aims to evaluate the barriers and challenges that birthing hospitals in Kentucky had with the implementation of BKC protocol in their units after receiving a quality improvement training entitled “Jumping into Kangaroo Care Toolkit” (Barbier, 2010). All birthing hospitals that completed the survey were working to implement BKC in their units. Most of them (88%) reported having a writing policy about BKC. The best tool for implementing a change in hospital practices is the establishment of an effective policy that reflects the performance expectations to create an effective and sustainable system (Joint Commission International). Few administrations from birthing hospitals in KY (only 25%) provided funds to implement BKC as a new hospital practice. This could be a challenge to units considering that healthcare providers and staff required training and dedicated time to engage in policy development to embrace the quality of care improvement model (Joint Commission International). Nevertheless, our results show that birthing hospitals in KY did improve in regard to a change in the hospital practice of mother/infant care by offering BKC to 100% of uncomplicated vaginal births as recommended by the “Jumping into Kangaroo Care Toolkit” (Barbier, 2010). Some authors have recommended the use of algorithm to analyze the practice of BKC in the first hours of life to highlight the challenges and to identify barriers and opportunity for improvement in this important practice (Brimdyr, Cadwell, Stevens, & Takahashi, 2018).

Step 4 of Baby Friendly initiative recommends implementing BKC in the first hour after birth by *“place all babies in skin-to-skin contact ... immediately or within five minutes after birth and continue without separation for an hour or more, unless there were medically justifiable reasons”* (Baby Friendly USA, 2016; UNICEF, 2012). The results of this survey show that the greatest barrier reported implementing appropriate BKC was interruption by family members to hold the newborn. The Cochrane review on early skin-to-skin for healthy infants and their mothers finds strong evidence that this procedure improves physiological regulation and increases breastfeeding (Moore et al., 2016). Family preparation about the benefit of BKC via uninterrupted BKC is warranted for the continued implementation of this practice of healthcare to mother and infant in birthing hospitals.

Despite the evidence about the benefits of direct skin-to-skin contact after birth, still was a fact in our study that some medical providers insisted in interrupting BKC to perform routine patient evaluations. This was mentioned as the second reason for the interruption of BKC. Other authors have mentioned that BKC could be seen by medical providers as a procedure that interfere with the common practice, unnecessary to complete one whole

hour, and even considered it more harmful than beneficial (Alenchery et al., 2018). Medical providers unaware of the benefit of the BCK practice provide little collaboration and needs to be recognized. Evaluation of the “urgency” to interrupt BKC to accommodate physicians’ is also needed to follow the recommendation of “immediate” and “without separation” of mother and their newborns (Baby Friendly USA, 2016; UNICEF, 2012).

The evaluation of breastfeeding rates after implementation of BKC in the birthing hospitals of Kentucky showed a significant statistical improvement of “ever breastfed infants” with the new practice. However, the rates of “ever breastfed” reported by the managers are lower than the CDC report cards which showed that in 2014 the “ever breastfed rate” in KY was 61% (CDC, 2014). In fact, the rates of “ever breastfeed” in KY is on a steady rise, but still insufficient when is compared with the national rate (KY 73% vs. National 83%) (CDC, 2018). There is an outstanding work that birthing centers need to undergo collectively to perform procedures such as BKC to increase the rates of ‘ever breastfed infant’ in the state.

Limitations

One limitation regarding this study was that only 52% of the birthing hospitals in KY replayed to the survey, which could limit representation, but 52% is considering good for an internet-survey. A second limitation was the low survey response rate from hospitals in counties with small birth rates. The birth averages for counties that were not represented equaled 295 birth per year and the birth average for counties that were represented equal 1,274 birth per year, however, roughly only 58% of the birth in the state of KY were born in these large hospitals represented in our sample (Kentucky State Data Center, 2017). Generalization of results to hospitals with lower birth rates in comparison to those with higher ones is limited because of the much lower survey return rate among such facilities.

Conclusion

In conclusion, this quality improvement model of BKC in birthing hospitals positively affected the rate of breastfeeding in the state of Kentucky. Barriers identified to uninterrupted BKC were lack of cooperation by family members, and medical providers. A multidisciplinary collaborative effort to support this evidence base practice is needed to provide the best care of mothers and their babies.

As a result of this study, future recommendations would be to increase the support needed to train medical and hospital staff as well as to educate family members of the positive benefits of uninterrupted BKC in order to continue progress towards the important goal of increasing breastfeeding. Follow-up evaluation and additional tools to keep suitability of BKC in the birthing hospitals in Kentucky is warranted.

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Figure 1. Map distribution of birthing hospitals in Kentucky participating in the survey (N=25)*

★ = County with one Birthing Hospital

★ = County with two Birthing Hospitals

* = One Birthing Hospital did not report county

Figure 2.
Resources assigned to implement BKC in birthing hospitals in Kentucky (N=25)

Figure 3.
Percentage of person causing interruption of BKC during hospitalization in Kentucky
(N=25)

Table 1.

Percentage of Birthing Hospitals that Trained Healthcare Staff Utilizing the Jumping into Kangaroo Care Toolkit in Kentucky (N=25)

Variable	Birthing Hospitals	
	#	%
<i>Did the hospital train healthcare staff using the tool kit for BKC?</i>		
- Yes	21	84
- No	4	16
<i>Trained personnel in the hospital</i>		
- O.B. Nurses	21	80
- Mother/baby unit nurses	20	80
- Pediatricians	6	24
- OBGYN	6	24
- CNA (tech)	6	24

Table 2.

Assessment of Breastfeeding in Birthing Hospitals in Kentucky (N=25)

Variable	Birthing Hospitals	
	#	%
<i>Is the infant assessed for breastfeeding on mother's chest?</i>		
- Yes	24	96
- No	1	4
<i>How does the birthing hospital collect breastfeeding data?</i>		
- Mother admission choice record	3	12
- Infant feeding record taken from the chart	22	88
<i>Breastfeeding rate[*] reported by birthing hospitals</i>	Mean (SD)	Range
- 2014	51.4% (4.2)	0 – 80
- 2015	55.3% (3.5)	16 – 82

*
n=20, 5 birthing hospitals did not provide information.