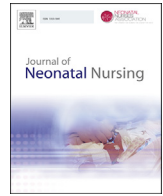




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Original Article

Kangaroo Care in the high-technology neonatal unit: Exploring evidence-based practice, policy recommendations and education priorities in Northern Ireland

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ABSTRACT

Background: Kangaroo Care (KC) in high technology settings is often defined as a form of parental caregiving where the newborn low birthweight or preterm infant is intermittently nursed skin-to-skin against the mother or father's chest. Several studies have considered the benefits associated with KC. Despite these benefits, there are still many neonatal nurses who are hesitant to initiate KC with preterm infants, and lack knowledge about the conditions appropriate for KC.

Objectives: To investigate the extent of KC practice in Northern Ireland neonatal units using a survey to explore nursing knowledge, barriers and perceptions concerning KC.

Methods: Seventy-eight neonatal nurses completed a previously developed Kangaroo Care Questionnaire with four scales relating to knowledge, practice, barriers and perceptions, and an open-ended question. SPSS 22.0 and content analysis were used to summarize the data.

Results: Neonatal nurses had an overall good understanding of KC and its benefits. Knowledge relating to eligibility of infants for KC caused the greatest uncertainty. The majority (70%) of respondents agreed that KC has a positive effect on the parent–infant relationship. Barriers to KC implementation included infant safety concerns and nurses' reluctance to initiate KC.

Conclusions: The single greatest barrier to implementation of KC appears to be uncertainty about the appropriateness of the intervention for a particular baby. Educational interventions that provide neonatal nurses with an extensive knowledge base and highlight the skills necessary to provide KC should be considered. Overall, a context-specific and theoretically grounded practical training package for all neonatal healthcare staff including evidence-based policies may help promote KC in NICUs.

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Introduction

Family-centred care (FCC) is now widely accepted as an important and necessary philosophy underpinning neonatal intensive care (Gooding et al., 2011). It is an approach to health care rooted in the belief that optimal health outcomes are achieved when an infants' family members play an active role in providing emotional, social, and developmental support. Family-centred care operates to support families as they join in the care of their infant in

the neonatal intensive care unit (NICU) (Gooding et al., 2011). A central component of FCC, supported by the UNICEF Baby-Friendly Hospital Initiative (WHO/BFHI, 2009) is the involvement of parents in Kangaroo Care (KC). KC initially originated in Bogota, Colombia in 1979 as a means of providing thermoregulatory and developmental support to preterm and/or low birth weight infants in the absence of available incubators. It has been defined as early, prolonged and continuous skin-to-skin contact between the mother and newborn infant until the 40th week of post-natal gestational age (Cattaneo et al., 1998). Today, in more affluent and higher technology settings, KC is often defined as a form of parental care-giving where the newborn of low birthweight/preterm infant is intermittently nursed skin-to-skin against the mother or father's chest for a non-specific period of time (Kenner and Lott, 2003). Since the inception of KC, numerous research studies have been undertaken to consider

Abbreviations: FCC, Family Centred Care; KC, Kangaroo Care; NICUU, Neonatal Intensive Care Unit; NI, Northern Ireland; US, United States.

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the benefits and safety of KC for both infants and parents. It is now widely accepted that KC is a beneficial intervention with physiological and neuroprotective benefits for LBW and preterm infants (Conde-Agudelo, 2011; Browne, 2004; Nagorski, 2007; Luddington-Hoe et al., 2008; Cong et al., 2009; Scher et al., 2009; Feldman et al., 2014). In 2010, the Expert Group of the 7th Kangaroo Mother Care Workshop, presented recommendations for the application of KC in the high-tech environment (Nyqvist et al., 2010). Despite the acceptance of KC as a safe and beneficial intervention for low birthweight and preterm infants, including those infants receiving high-technology care (Nyqvist et al., 2010), the extent and utilisation of KC in high-technology neonatal units and guidelines for the procedure remain varied worldwide (Black, 2005; Boo and Jamli, 2007; Luddington-Hoe et al., 2003; Stikes and Barbier, 2012). More recently, findings from a large scale European e-Delphi study to identify neonatal intensive care nursing research priorities revealed family centred care including KC, within the six highest ranking research priorities (Wielenga et al., 2014). Authors suggested that this priority may be highlighted, not as a lack of available research but rather, a lack of effective implementation of research evidence into clinical nursing practice. The focus of this study was to explore the current knowledge and beliefs surrounding KC and its application in clinical practice among neonatal nurses in Northern Ireland.

Aims

There were two main aims in this study: 1) To determine the extent of evidence-based KC practice among infants receiving high-technology neonatal care using a survey to explore nursing knowledge, practice, barriers and perceptions concerning KC; and 2) In light of findings, to make recommendations for practice and policy development, and to suggest education strategies relating to effective delivery of KC.

Methods

Study design

This study implemented a survey research design using the Kangaroo Care Questionnaire previously designed by Engler et al. (2002). This questionnaire includes four scales relating to Knowledge, Practice, Barriers and Perceptions. Items include the use of the five-point summated rating scales and true/false responses. Seventeen true-false items are utilised in the Knowledge scale. These items were selected as representing information sufficiently reported in the literature to comprise a valid test of knowledge of KCs effects on parents and infants (Engler et al., 2002). Information on current KC Practice was elicited with 11 quantitative items, considering the practice of KC with infants receiving care for various conditions and with levels of acuity. Respondents were asked to rate 20 items on a summated rating scale indicating the degree of influence each had as a Barrier to practicing KC in their neonatal intensive care unit (NICU). Scale options ranged from Not Influential at All (1) to Very Influential (5). Twenty-four items were used to determine the respondent's personal Perceptions of KC based on professional experience (Engler et al., 2002). A single open ended question; "Have you encountered any difficulties in implementing KC in your NICU?" was also included in order to gain more in-depth information relating to barriers to delivering KC. Additionally, basic anonymous demographic data was collected including gender, level of nursing education and years of working within neonatal intensive care. Engler et al. (2002), supported the original questionnaire's reliability by conducting a Cronbach's Alpha reliability coefficient for each scale.

Research setting

Three neonatal units in Northern Ireland were included in the study. These hospitals provide Level 1 (intensive care) and Level 2 (high dependency care) (BAPM, 2001) for preterm and ill newborns. Level 3 care (special care) is also provided in these neonatal units. These hospitals were chosen in order to explore the use of KC specifically within the high-intensity, high-technology environment.

Participants

All nurses in each neonatal unit were invited to take part in the survey. A poster was placed in each unit inviting nurses to participate in an information session detailing the study. Following these sessions, all staff were given an information package including the questionnaire with instructions. All questionnaires were completed anonymously within one month of distribution and returned to a sealed box. The questionnaire was also available for staff to complete online via Survey Monkey® online survey software. Completed questionnaires were collected and securely stored in accordance with the University Research Ethics Committee requirements.

Statistical analysis

Questionnaire data were transferred to a secure database for analysis. Quantitative analysis of survey responses was undertaken using SPSS 22.0 computer package software. Content Analysis was used for the responses to the open-ended question.

Ethical considerations

Ethical Approval was granted from the School of Nursing and Midwifery, Queen's University Belfast Research Ethics Committee (SREC No. 12.08.01). Clinical Governance approvals were also granted for each of the three hospitals included in the survey.

Results

Demographic characteristics of participants

All neonatal nursing staff in the three units were invited to take part in the survey. In total 78 nurses working in the three neonatal units responded, equating to a response rate of approximately 69%. The majority of nursing staff were female ($n = 75$, 96%; Table 1).

Table 1
Descriptive characteristics of participants.

Descriptive Characteristics	Number of Nursing Staff (n = 78) n (%)
Gender	
Male	3 (3.8)
Female	75 (96.2)
Years Working	
<1	6 (7.7)
1–5 years	37 (47.4)
6–10 years	13 (16.7)
11–15 years	6 (7.7)
16–20 years	3 (3.8)
>20 years	12 (15.4)
Unknown	1 (1.3)
Highest Education Level	
National Diploma	24 (30.8)
Bachelor's Degree	46 (60.0)
Master's Degree	1 (1.3)
Other ^a	6 (7.8)

^a Other: includes Enhanced Practice Course ($n = 2$); Postgraduate Certificate ($n = 2$); State Registered Nurse qualification ($n = 2$).

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