Fathers providing kangaroo care in the neonatal intensive care unit settings: a scoping review protocol

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Abstract

Title: Fathers providing kangaroo care (KC) in the neonatal intensive care unit setting: a scoping review

Background: Kangaroo Care (KC) is used as standard practice in neonatal intensive care units (NICUs) worldwide to provide optimal nurturing and health outcomes for premature and term infants. KC is provided mostly by mothers rather than fathers, but over the last few decades fathers have played a greater role in their infants' care and development and increasing numbers of fathers are being supported to give KC to their newborn. However, there is limited evidence about Father–infant KC (Father KC).

Objectives: The aims of this proposed scoping review are to provide e evidence about the impact of KC on fathers who are providing KC to their babies in NICU settings.

Methods: A scoping review will be conducted. There are 6 stages to follow to accomplish it: 1): identifying the research question; 2): identifying relevant studies; 3): study selection; 4): charting the data; 5): collating, summarising, and reporting the results Stage 6): Consultation. The literature will be sought in the data bases including Medline, Embase, APA PsycInfo, Emcare and Cochrane CENTRAl via the Ovid platform, and Web of Science. Grey literature will be also reviewed. The information related to the research question and the objectives will be extracted from the selected studies and presented either in a diagrammatic, graphical, or tabular form.

Results: This scoping review will explore the impact of KC on fathers, and identify the factors that influence the experience of Father KC.

Conclusion: This scoping review will identify the gaps in the literature relating to the experience of fathers providing KC in NICUs. It is anticipated that nurses and midwives will use the findings to improve the support they provide to fathers to facilitate KC with neonates in their respective NICU settings.

Introduction

Approximately fifteen million babies are born preterm, that is before 37 weeks of gestation each year globally. Unfortunately, approximately one million of these preterm babies die under the age of five, and it is estimated that three-quarters of these deaths could be prevented with current interventions (World Health Organisation [WHO] 2018), such as Kangaroo Care (KC); a recommended strategy to improve the health and wellbeing of premature babies in neonatal care (WHO 2015). KC, sometimes referred to as Kangaroo Mother Care (KMC) or Skin-to-Skin Care (SSC), mimics marsupial caregiving. KC entails placing a baby dressed in only a nappy between the mother's breasts in a vertical position, chest to chest, secured with a cloth around the back of the baby's body (Bera et al. 2014; Conde-Agudelo & Díaz-Rossello 2016; Chan et.al. 2016). The father and other family members can also provide KC, enabling the mother to have a break and rest (WHO 2003). The definition of KC is evolving as people's understanding of how it meets the needs of the mother, father and baby also evolve (Chan et al. 2016).

Kangaroo Care (KC) was initiated by Dr. Edgar Rey at the Instituto Materno Infantil in Santa Fe de Bogotá, Colombia in 1978. At that time, there was a shortage of incubators, which resulted in increased episodes of hypothermia, with subsequent increases in the mortality rate. Therefore, mothers were asked to provide KC to their premature babies to keep them warm, acting as a human incubator (Conde-Agudelo & Díaz-Rossello 2016). Since then, the significant advantages of KC have been recognized. KC has been found to contribute to the reduction in mortality of low birth weight (LBW) babies (those born weighing less than 2500g regardless of gestational age) by approximately 30%, which is equivalent to the mortality improvement rate of a vaccine program (Reiberg 2020). KC practice has also been reported to help babies to thrive, shortens the length of hospitalization, and lowers the mortality rate caused by prematurity (Conde-Agudelo & Díaz-Rossello 2016; Renfrew et al. 2010).

When reviewing caregiving in human beings, mothers are still the main carers of children, and fathers are perceived as the main income earner (Fisher et al. 2018; Günay & Coşkun Şimşek 2020). In Bowlby's attachment theory, John Bowlby (1958) illustrated that the mother has the primary bonding role with her child, and the father's role is as the supporting parent. Consequently, as mothers are seen as the main carer in a neonatal unit, KC has been primarily focused on them and little attention has been given to the potential for fathers to provide KC. Health professionals' focus on mother–infant care has resulted in the father becoming a 'bystander' (Steen et al. 2012; Fisher et al. 2018). However, fathers do have a fundamental biological attachment with their babies (Fisher et al. 2018). Increasingly, there is a growing recognition of the father's role in a child's early development (Coleman et al. 2004). Father's involvement in caring for their children has steadily increased over the last few decades (Yogman et al. 2016). Father KC has the potential to further promote father–infant bonding and attachment (Blomqvist et al. 2011).

To date, research on KC has focused on mothers and infants, and there is a dearth of literature published on Father KC (Martel et al. 2016). This scoping review will be the first scoping review in this research to be filed. It is envisaged that the findings will contribute to bridging the current research gap, and provide evidence to support neonatal nurses and midwives to facilitate Father KC in NICUs.

Objectives:

This scoping review will provide evidence about the impact of KC on fathers who are providing KC to their babies in the NICU settings. This review will search for and identify any relevant

studies about KC and fathers, map the current evidence, determine the impact of KC on fathers, and finally identify facilitators and barriers for practicing Father KC in the NICU.

Method:

A scoping review involves mapping evidence on a certain topic to identify its volume, nature, and characteristics, aims to address and unpack a broader area of interest, beyond a specific question answered by a systematic review (Tricco et al. 2018, Peters et al. 2015), and determine any research gaps, ultimately to assist policymakers, practitioners, and consumers to make decisions based on the findings (Arksey & O'Malley 2005, Tricco et al. 2018). A scoping review is recognized as a high-quality review to be conducted for more complex and novel topics (Lockwood et al. 2019). In addition, scoping reviews have been shown to be useful in the study of topics that are under-researched (Peterson et al. 2017), especially, in health science and therapeutic care (Lockwood et al. 2019).

The proposed scoping review will be conducted under the framework initially published by Arksey and O'Malley (2005), further developed by Levac et al. (2010) and Tricco et al. (2018), and most recently refined by Peters et al. (2020). This review will be undertaken as follows in accordance with the six-stage methodology framework outlined by Arksey & O'Malley (2005, pp. 22–23): "Stage 1: identifying the research question; Stage 2: identifying relevant studies; Stage 3: study selection; Stage 4: charting the data Stage; 5: collating, summarising, and reporting the results; Stage 6: Consultation." The findings of this scoping review will be reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA-ScR) checklist described by Tricco et al. (2018) to ensure it to be complete and transparent (Levac et al. 2010).

Stage 1: Identifying the research question

To accomplish a broad review, the research question of a scoping review encompasses the concept, target population, and health outcomes of interest (Levac et al. 2010). At the starting point of this review, the draft research question is "*What impact does KC have on fathers whose babies are cared for in NICUs*?". The research seeks to understand the views and experiences of fathers providing KC to their babies in NICUs.

Stage 2: Identifying relevant studies

Identifying relevant studies is vital for a scoping review to achieve comprehensiveness in the search (Arksey & O'Malley 2005, Peters et al. 2020). The PCC (Population, Concept and Context) framework is defined to target the key components of a scoping review when searching for primary sources, and to guide a broad search in databases. This process is undertaken systematically and transparently with the use of keywords (Peters et al. 2020). Table 1 presents the framework of PCC assisting with specifying eligibility criteria and the keywords, which will be used as the search strategy guidance for this scoping review (Peters et al. 2020). The databases to be included in this review are Medline, Embase, APA PsycInfo, Emcare and Cochrane CENTRAl via the Ovid platform, and Web of Science. Reviewing grey literature will be conducted simultaneously to minimize publication bias and expand the search. This literature search will include unpublished clinical trials, conference abstracts, manual searching in reference lists, web searching, for example, in Google Scholar and ProQuest, and communicating with peers and experts via media tools (Peterson et al. 2017). It may also include KC clinical procedures and information pamphlets.

The inclusion studies will be primary sources using qualitative, quantitative, and mixed methods to explore both the efficacy and acceptability of Father KC practice. This review will cover related information in the language of English published from 2000 to 2020, aiming to capture the most current Father KC research evidence from wide-ranging sources.

Table 1 The draft PCC framework

PCC Elements	Eligibility Criteria	Keywords
Participants	Fathers from all geographical locations and all cultural backgrounds will be included. Babies, including term, preterm and LBW babies from different geographical locations with diverse cultural backgrounds, but limited to neonates (infants under 28 days of life).	*father** or *dad** or *paternal** or *parent** or *male caregiver* or *Paternal role* or *Father-Child Relations* or a *primary carer or co-carer* *neonate** or *newborn** or *baby* or *babies* or *preterm infant** or *pre-term infant** or *preterm bab** or *prematurity* or *premature infant** or *premature bab** or *preterm neonate** or *Low Birth Weight* or *LBW* or *extremely premature bab** or *extremely premature infant** or *postnatal bab** or *term infant** or *term bab**
Concept	The practice of Kangaroo Care	*kangaroo care* or *KC* or *kangaroo mother care* or *KMC* or *skin to skin* or *STS* or *skin to skin contact* or *skin-to-skin contact* or *SSC* or *paternal skin to skin contact* or *paternal skin-to-skin contact*
Context	The NICU context will be clearly defined and may extend to other relevant areas where fathers may practice KC.	*NICU** or *neonatal intensive care* or *neonatal care* or *intensive care* or *intensive care units or neonatal* or *special baby care unit* or *special care nursery (SCN)* or *postnatal ward* or *delivery room* or *labour** or *labo?r* ward* or *theatre or operating room* or *recovery room* or *parenting room or transitional care*

Stage 3: Study selection

Sources of literature will be collated in the bibliographic database, EndNote. Duplicate studies will be screened and removed using EndNote, followed by manual de-duplication by the primary researcher. Two reviewers are required to select the relevant studies independently in keeping with eligibility criteria, by initially screening titles and abstracts to remove obvious unrelated resources, followed by reviewing the full text to justify whether the inclusion criteria are met. A third reviewer will be involved when there is a disagreement to obtain a consensus view (Peters et al. 2015). The full selection process will be displayed descriptively in a flow diagram according to PRISMA-ScR checklist item 17 (Tricco et al. 2018).

Stage 4: Charting the data

In a scoping review, charting the data is akin to data extraction (Peters et al. 2020). The extracted data is related to the nature and the content of each inclusive study, as well as following the elements of the PCC framework (Levac et al. 2010). The data will be summarized narratively on a Microsoft Excel spreadsheet. For this scoping review, the draft of data extraction fields is shown in Table 2 and will be reviewed and further refined at this stage by two researchers (Peters et al. 2020).

Table 2: Data extraction fields

Author(s): The first author or the first author et al.
Year of publication: 2000-2020
Country of origin (where the source was published or conducted): Unspecified
Aims/purpose: Studies about Father KC
Population and sample size within the source of evidence (if applicable): Parents, fathers Neonates, premature babies, postnatal babies, preterm babies, LBW babies NICU settings
Methodology / methods: All methods to conduct studies
Intervention type, comparator, and details of these (e.g., duration of the intervention) (if applicable): Father KC
Outcomes and details of these (e.g., how measured) (if applicable): Factors associated with Father KC
Key findings that relate to the scoping review question/s: The impact of Father KC on fathers

Stage 5: Collating, summarizing, and reporting the results

Consistent with a scoping review methodology, this stage will commence with analysing data, which includes collating and summarizing data, followed by reporting the findings, and finalized by applying meanings to the results (Levac et al. 2010). The goal of this stage is to map the available literature associated with the research topic, identify the research gaps and limitations, and underpin the decision making of results and findings (Arksey & O'Malley 2005). This iterative process will involve the methods of descriptive numerical summary and thematic analysis (Levac et al. 2010). The reporting format will be adapted either in a diagrammatic, graphical, or tabular form within the confirmed data extraction fields (Peters et al. 2020).

Stage 6: Consultation

The findings yielded from Stage 5 are generally considered the preliminary scoping review findings, which will be reviewed by an independent researcher, thus increasing the credibility of this review (Levac et al. 2010).

Conclusion

Kangaroo care is now standard practice in NICU settings. Traditionally, mothers are the primary carer to their children, the KC providers are consequently thought as mothers, with fathers as bystanders. The current KC research focuses on babies and mothers, and little is known about fathers' experience of KC. A scoping review is an appropriate approach to explore this novel topic. The findings will determine the gaps in this field, and provide evidence to help health professionals promote Father KC in NICU settings. It is anticipated that nurses and midwives will use the findings to improve the support they provide to fathers to facilitate KC with their babies in their respective NICU settings.

Acknowledgements

We acknowledge the contribution of Dr. Trudi Mannix for her guidance on the scoping review protocol, and the librarians, Upeksha Amarathunga and Natalie Dempster, respectively from University of South Australian and Women's and Children's Hospital, Adelaide, South Australia, for assisting in searching literature in the databases for the scoping review.

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