

ORIGINAL ARTICLE

Parents and healthcare professionals' attitudes to Kangaroo Care for preterm infants in the United Kingdom

Saskia Walker¹ | Shalini Ojha¹  | Eleanor J. Mitchell²

¹Academic Unit of Population and Lifespan Sciences, School of Medicine, University of Nottingham, Nottingham, UK

²Nottingham Clinical Trials Unit, School of Medicine, University of Nottingham, Nottingham, UK

Correspondence

Eleanor J. Mitchell, Nottingham Clinical Trials Unit, School of Medicine, University of Nottingham, Nottingham NG7 2UH, UK.

Email: eleanor.mitchell@nottingham.ac.uk

Abstract

Aim: To explore the attitudes of parents and healthcare professionals (HCPs), and facilitators and barrier to implementation of Kangaroo Care (KC) in the United Kingdom.

Methods: Online cross-sectional survey; distributed via the British Association of Perinatal Medicine, Bliss (UK-based charity), social media.

Results: Sixty HCPs responded. 37 (62%) were nurses/nurse practitioners. 57 (95%) regularly implement KC. The most important factor that supported KC implementation was the team's belief in benefits of KC. Increased workload, staff shortage and fear about safety of KC in unwell infants were recognised as the challenges preventing implementation.

Five hundred eighteen parents responded. 421 (81%) had a preterm baby within 3 years. 338 (80%) were familiar with KC. The main facilitator was the belief that their baby enjoyed it. Excess noise and crowding on the unit were the most frequently reported barriers. Lack of opportunity and limited staff support were the main reasons why they had been unable to practice KC.

Conclusion: We found that most HCPs and parents believe that KC is beneficial and would like to practice it. Lack of resources to enable effective implementation is the main barrier. Service development and implementation research is required to ensure that KC is delivered in all UK neonatal units.

KEYWORDS

Family-integrated care, Infant, preterm, Kangaroo care

1 | INTRODUCTION

Globally, approximately 15 million babies a year are born preterm (before 37 weeks gestational age).¹ Prematurity is the leading cause of child death, accounting for nearly half of deaths in children under 5 years of age.¹ Universally applicable and cost-effective

interventions that improve survival in preterm infants are, therefore, essential.

Kangaroo Mother Care (KMC) is defined by the World Health Organisation (WHO) as early continuous skin-to-skin contact (SSC) between a mother and her newborn.² Terms for KMC are used interchangeably in the literature. The term Kangaroo Care (KC) is

List of Abbreviations: BAPM, British Association of Perinatal Medicine; HCP, healthcare professionals; KC, kangaroo care; KMC, Kangaroo Mother Care; SD, standard deviation; SKC, skin to skin contact; UK, the United Kingdom; WHO, World Health Organisation.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2023 The Authors. *Acta Paediatrica* published by John Wiley & Sons Ltd on behalf of Foundation Acta Paediatrica.

often used to refer to the SSC between either parent and the baby. We use the term KC preferentially to include both parents in the practice.

A Cochrane systematic review of 21 randomised controlled trials, (16 in low- or middle-income countries and five in high-income countries), including 3042 infants, found that KC is associated with reduced mortality, shorter hospital stays and reduced severe infection/sepsis and hypothermia when compared to conventional incubator care. Other benefits identified included increased infant growth, enhanced breastfeeding, improved mother-infant attachment and decreased cost of care.³ An economic analysis including 18 UK neonatal units demonstrated that for every \$1 invested in interventions to increase KC would generate benefit between \$4 and \$13.82.⁴ Despite this evidence, the uptake of KC, particularly in high-income settings has been limited.⁵

A recent review KC research and implementation in the United Kingdom found that there is very little information about barriers and facilitators to its implementation in the United Kingdom.⁵ We aimed to explore the attitudes of parents and healthcare professionals (HCPs), in the United Kingdom, towards KC and describe perceived facilitators and barriers to practice.

2 | METHODS

Two online surveys were designed using Microsoft Forms and user-tested by HCPs and parents of children born prematurely prior to release.

In November 2021, we distributed the healthcare professionals' (HCPs) survey via the British Association of Perinatal Medicine (BAPM) newsletter, social media and emails to professional contacts. We shared the parent's survey via BLISS (www.bliss.co.uk), the UK's leading charity for preterm or sick babies, and social media, including Facebook and Twitter groups for parents.

Responses were invited from HCPs who worked in neonatal units in the United Kingdom and parents who had a preterm infant who had received care in a UK neonatal unit within the last 3 years. No parent or HCP was approached or recruited via hospital or other professional contacts. Participation was elicited via hospital or other professional contacts. Participation was elicited via open, public post on social media only and hence ethical approval was not required.

Questions included participants' demographics, and multiple-choice questions exploring participants experience of KC and facilitators and barriers to practice in the neonatal unit. We exported data to Microsoft Excel and SPSS for statistical analyses. Results are presented as frequencies and percentages, and we performed Fisher's exact test was to investigate the potential differences in familiarity of KC between parents of White British and other ethnic minority groups because previous research reported racial and ethnic disparities in breastfeeding.^{6,7} We also performed a narrative thematic analysis of the free-text comments of the parent's survey to complement the quantitative data.

Key notes

- Kangaroo care (KC) improves survival of preterm infants but is inconsistently practiced in the United Kingdom hence it is vital to explore the barriers and facilitators of KC in this setting.
- Parents and healthcare professionals support use of KC in neonatal units but perceived lack of resources and guidance as the main barrier.
- Improved resources and implementation research is required to promote delivery of KC to all babies in UK neonatal units.

3 | RESULTS

3.1 | Healthcare professionals survey

We received 62 responses but 2 were excluded because the participants did not work in a neonatal unit. 37/60 (62%) were nurses or nurse practitioners and 22/60 (37%) were doctors. 45/60 (75%) were White British, and 15/60 (25%) were from other ethnic groups. 47/60 (78%) had been qualified to work in neonatal care >7 years. All respondents reported that they were familiar with KC and 57/60 (95%) said they regularly used KC in practice.

Among those who regularly use KC, 48/57 (84%) recommend KC for babies born at <28 weeks gestational age also while 9/57 (16%) would implement it in 28–32 weeks and more mature infants only.

HCPs reported that, in their view, the most common difficulty encountered by mothers while practicing KC was the lack of appropriate space. They felt that knowledge about the benefits of KC was the biggest supporter of the practice while increased workload and staff shortages were the most frequently selected challenge. The frequencies of the responses selected by the HCPs are given in Table 1.

On a five-point scale ranging from 'very likely' to 'very unlikely', 56/60 (93%) said they would 'very likely' to recommend KC if appropriate support was available. There was no difference in the responses from participants who had been qualified for ≤10 years as compared to those who had >10 years' experience on their views on whether increased workload and staff shortages made KC implementation difficult (OR 0.43, 95% CI 0.103–1.783, $p=0.225$) or concerns that medical conditions were barriers (OR 0.945, 95% CI 0.335–2.669, $p=1.000$).

Free-text responses highlighted the value HCPs place on KC, for example 'Kangaroo care is very important to our babies and our staff are passionate about how important it is for both our premature babies and our parents' (Consultant) and 'I think Kangaroo care should be prescribed!!!' (Nurse).

However, there was some HCPs identified barriers to implementation, for example 'I am concerned that the pressure to provide Kangaroo Care/FiCare and be seen to be parent-friendly is sidetracking

TABLE 1 Healthcare professionals' perceptions of barriers and facilitators of Kangaroo Care in place of work.

	Number (%) of responses
What are the difficulties faced by parents practicing Kangaroo Care in your neonatal unit? <i>n</i> = 57	
No difficulties	17 (30%)
Inappropriate space, for example too crowded/noisy/lack of privacy	25 (44%)
Discomfort	18 (32%)
Pain	18 (32%)
Lack of staff support	16 (28%)
Tiredness	15 (26%)
What factors support the implementation of Kangaroo Care in your neonatal unit? <i>n</i> = 57	
Belief in benefits	55 (97%)
Hospital guidance in place	33 (58%)
Effective training for HCPs	30 (53%)
Sufficient resources/staffing	20 (35%)
Early hospital discharge	7 (12%)
Other ^b	5 (9%)
None of the above	3 (5%)
What are the challenges to implementation of Kangaroo Care in your neonatal unit? <i>n</i> = 60	
Increased workload/staff shortages	48 (80%)
Concern about other medical conditions	27 (45%)
Lack of training for staff	17 (28%)
Lack of belief in the benefits	10 (17%)
Other ^a	9 (15%)
None of the above	9 (15%)
No hospital guidance in place	8 (13%)
Difficulty in monitoring of the baby	6 (10%)

^a'lack of space and suitable equipment' and 'concern regarding stability of the infant'.

^b'24 hour access to beds, cots, chairs, food and drink'.

us from the need to provide excellent medical and nursing care. I'm afraid when needing to make a choice of excellent medical/nursing OR kangaroo care, I will choose the former'. (Consultant).

3.2 | Parents survey

We received 518 responses but 97 (19%) were excluded as they were from parents who had not had a preterm baby in the last 3 years. 408/421 (97%) of the included respondents were mothers and 13/421 (3%) were fathers. The mean (standard deviation, SD) gestational age (GA) at birth of the participant's children was 30 (3.32). 122/408 (30%) had babies at <28 weeks' GA, 145/408 (36%) at 28–31 weeks and 141/408 (35%) at 32–37 weeks. 352/421 (84%) selected White British as their racial identity.

Of the 345/421 (82%) who said they were familiar with KC, 184 (53%) heard about it from a doctor in a hospital, 107 (31%) from a midwife and 39 (11%) from other sources including knowledge from their job, previous pregnancies, antenatal classes and BLISS leaflets.

325/345 (94%) had practiced KC. On a five-point scale ranging from 'very satisfied' to 'very dissatisfied', 310 (95%) were somewhat

or very satisfied with their experience and only 10 (3%) were somewhat or very dissatisfied. 325 parents responded when asked how long they practiced KC for: 246 (75%) said 'for less than 4 hours a day'; 59 (18%) for '4-8 hours a day'; and 21 (6%) for '> 8 hours a day'.

Parents likes, dislikes and perceived facilitators and barriers to having KC with their baby are given in Table 2. There were 19 parents who had not had KC with their babies. The reasons why they were unable to do KC are also given in Table 2. Analyses of the free-text responses reiterated the barriers faced by parents. Themes generated from free-text responses are given in Table 3.

Odds of being familiar with KC was significantly higher for respondents who identified as of White British (55/346, 84%) as compared to those who identified as other ethnicities (47/68, 69%) (OR 2.4; 95% CI 1.3 to 4.3; *p* < 0.001).

4 | DISCUSSION

We found that parents of preterm infants and HCPs working in UK neonatal units almost universally support implementation of KC in neonatal care. However, despite its many benefits, implementation

TABLE 2 Parents' likes, dislikes and perceptions of barriers and facilitators of Kangaroo Care.

	Number (%) of responses
What did you like about practising Kangaroo Care? n=326	
Felt close to my baby	315 (97%)
It helped my baby	296 (91%)
Enjoyment	259 (79%)
Confidence in caring for baby	219 (67%)
Reduced anxiety	216 (66%)
Nothing	2 (1%)
What did you dislike about practising Kangaroo Care? n=326	
Nothing	211 (65%)
Noisy and crowded space	93 (29%)
Unsupported by staff	33 (10%)
Discomfortable	17 (5%)
Tiring	11 (3%)
Painful	3 (1%)
What facilitated your practising Kangaroo Care? n=326	
Seeing the baby's enjoyment	286 (88%)
Support by staff	234 (72%)
Well informed	150 (46%)
Support by family	116 (36%)
Quiet and private space	80 (25%)
For parents who did not practice KC (n=19): Why did you not practice KC?	
No opportunity	13 (68%)
No support	8 (42%)
Ill informed	6 (32%)
Had not heard about KC	4 (20%)
Fear of harm to baby	1 (5%)
Cultural / social beliefs	0 (0%)

of KC for preterm infants globally lags behind the long standing evidence³ to support its use. Our results show that the excess workload, lack of time and resources, and the absence of clear guidance prevent HCPs from implementing and supporting KC in their practice. With limited resources, it was interesting to find that some doctors feel they are forced to make a choice between providing 'excellent medical and nursing care' and KC.

Some also expressed concern about the fear of harm to sick infants as a reason why they hesitate. Interestingly, 18% of HCPs said they would not recommend KC in <28 weeks' gestational age infants. These findings are supported by earlier reports concerning the specific needs of preterm infants such as high humidity and warmth of the incubators, mechanical ventilation and phototherapy make HCPs hesitant in using KC.⁸ Other barriers including concerns for infant safety, insufficient training, increase workload and lack of clear guidance and management support⁹ have been expressed by

TABLE 3 Themes and quotes from parents' free-text response about their experience of Kangaroo Care in UK neonatal units.

Theme: Overwhelming emotional benefit
Quotes: 'The first time we did it I was flooded with love hormones. It was the most wonderful feeling in the world. If my second baby has to go to NICU I will do it for as many hours as feasibly possible every day until we leave'. 'We loved kangaroo care so much we named our baby Joey after it:'
Theme: Fear of interfering with clinical care
Quote: 'It felt like a burden to ask staff to get her out of NICU incubator and too many complicated and scary wires to do it myself without accidentally pulling something out...so I did not do it much, maybe twice a week only'.
Theme: Lack of or inconsistent support from staff
Quotes: 'Despite one nurse telling me to do more kangaroo care, another was telling me not to' 'I was never offered kangaroo care. The twice I did it was because I asked for it' 'I only had the confidence to do any of this because I had the support and encouragement of the amazing neonatal nurses on the unit'.
Theme: Lack of privacy and comfort
Quote: 'Hard to have true skin-to-skin in the middle of NICU/SCBU - no privacy. Uncomfortable chair made it harder to sit for long periods of time in the same position as limited movement due to wires and monitors, etc'.

nurse in other high-income countries such as in a national survey of nurse in the USA⁸ and a survey and in-depth interview of nurses in Australia.¹⁰ Interestingly, nurses in the USA who worked in neonatal units that practiced KC regularly had a more positive perception than those who worked in units that did not practice KC.⁸ Qualitative studies show that clear guidelines, procedures, experience and continued education is required to improve HCPs confidence in supporting parents practice KC with their preterm infants.^{5,9} Available evidence does not suggest that KC interferes with intensive care no adverse events were reported even when infants receive KC post cardiac surgery.¹¹ However, in the extremely preterm infants (born at <28 weeks' gestational age), the risk of intraventricular haemorrhage, particularly in the first 72 hours after birth, may be a cause for caution. Conventional KC requires the infants head to be placed in the lateral position, which could impede cerebral venous return and increase the risk of intraventricular haemorrhage.¹²

We did not include a response for the HCPs to indicate that, at least in some cases, they could not implement KC because the parents did not want it. This reason did not feature in the free-text responses but could be another potential barrier.

Parents who participated in our survey were very supportive of KC. 94% of the respondents reported practicing KC. This high rate is likely to be due to sampling bias.¹³ Responses were elicited via social media and it is likely that parents who were already aware of KC and had experienced it responded more than those who were not familiar with it. Most respondents reported a positive experience with several free-text responses about the joy of having KC with their babies. Parents also spoke about KC as a way they could

contribute to the care of their preterm infant. Other studies have reported enhanced attachment and feelings of confidence/empowerment as the main promoter of KC in settings similar to the United Kingdom.¹⁴ With the wide-spread enthusiasm for family-integrated care in UK neonatal units,¹⁵ KC could become a vital instrument in the move to return agency to parents, particularly to mothers, who are often, albeit unintentionally, marginalised during neonatal care.¹⁶ Such disempowerment is often worse for women from ethnic minorities. We performed a pre-planned analysis of the responses to the parents' survey by ethnicity of the respondent. We compared responses from those who identified as white British with those who identified as any other ethnicity to avoid multiple group comparisons with small samples in each group. This was done since our previous work showed that preterm infants born to black British mothers are less likely to be receiving mother's milk at discharge as compared to babies of on white British mothers.⁷ We found that parents who identified as ethnicities other than white British were significantly less likely to be familiar with KC when compared to the white British parents. These findings further highlight the existing ethnic health inequalities in maternal and neonatal health care in the United Kingdom.¹⁷

Parents reported that the neonatal unit environment such as lack of privacy and noise were a major barrier to practicing KC. Others stressed that staff behaviour had a great impact reporting that support from staff was the main facilitator and negative or conflicting messages from HCPs was a major barrier. A systematic review of the most frequent barriers to KC for mothers also showed that issues with facility environment/resources, negative staff interactions or attitudes, and lack of help from HCPs were among the top ranked barriers that prevented mothers from accessing KC.¹⁴ Future studies could also explore how long parents would like to practice KC and if they would continue to practice after discharge home.

The survey was online and largely distributed via emails and social media. We acknowledge that this strategy introduced selection bias. Participants were not individually invited to respond and, therefore, it is likely that those who have an experience of using KC or have strong views about it may have, disproportionately, selected themselves to participate. As the invitation to participate were via open posts on social media platforms, we are unable to calculate a response rate to determine the magnitude of such a bias. However, we received many responses, particularly from parents. More systematic sampling, for example from parents with babies currently in neonatal care with a focus on responses from larger number of families from a wider range of socioeconomic diversity is required to truly understand the parental perceptions of KC in the United Kingdom.

Despite this limitation, our survey shows support for KC both among HCPs and parents. Improving HCPs and parental education and awareness of KC, implementing national and local guidance with adoption of recommendations from the parent organisations such as Bliss¹⁸ and the UNICEF UK Baby Friendly Initiative¹⁹ can promote the adoption of KC in routine neonatal care of preterm infants in the United Kingdom.

AUTHOR CONTRIBUTIONS

SW had the primary responsibility of designing and conducting the survey, analysing the results and wrote the first draft of the manuscript. SO supervised the design and execution of the study and prepared the final version of the manuscript. EM supervised the design and execution of the survey, analyses, reviewed results and contributed to the writing of the manuscript. All authors approved the final version of the manuscript.

FUNDING INFORMATION

SW worked on this study as part of her Bachelor in Medical Sciences degree at the University of Nottingham. The study did not received any external funding.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

ORCID

Shalini Ojha  <https://orcid.org/0000-0001-5668-4227>

REFERENCES

1. WHO. *WHO Recommendations on Interventions to Improve Preterm Birth Outcomes*. World Health Organization Avenue Appia 20, CH-1211 Geneva 27 Switzerland. Accessed January 31, 2023. https://apps.who.int/iris/bitstream/handle/10665/183037/9789241508988_eng.pdf;jsessionid=898DEBC9237C71C4B38F9CE6D1C2011?sequence=1
2. Weltgesundheitsorganisation, ed. *Kangaroo Mother Care: A Practical Guide*. The World Health Organisation; 2003.
3. Conde-Agudelo A, Diaz-Rossello JL. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database of Systematic Reviews*. 2016;8:CD002771. doi:10.1002/14651858.CD002771.pub3
4. Lawson K, Offer C, Watson J, McGuire B, Renfrew MJ. The economic benefits of increasing kangaroo skin-to-skin care and breastfeeding in neonatal units: analysis of a pragmatic intervention in clinical practice. *Int Breastfeed J*. 2015;10(1):11. doi:10.1186/s13006-015-0035-8
5. Stefani G, Skopec M, Battersby C, Harris M. Why is Kangaroo Mother Care not yet scaled in the UK? A systematic review and realist synthesis of a frugal innovation for newborn care. *BMJ Innov*. 2022;8(1):9-20. doi:10.1136/bmjinnov-2021-000828
6. Jones KM, Power ML, Queenan JT, Schulkin J. Racial and Ethnic Disparities in Breastfeeding. *Breastfeed Med*. 2015;10(4):186-196. doi:10.1089/bfm.2014.0152
7. Abdul Hamid HB, Szatkowski L, Budge H, Ojha S. Impact of the coronavirus disease 2019 pandemic on breastfeeding during and at discharge from neonatal care: An observational cohort study. *Pediatr Investig*. 2022;6(3):189-196. doi:10.1002/ped4.12337
8. Engler AJ, Ludington-Hoe SM, Cusson RM, et al. Kangaroo care: national survey of practice, knowledge, barriers, and perceptions. *MCN Am J Matern Child Nurs*. 2002;27(3):146-153. doi:10.1097/00005721-200205000-00004
9. Lim S. Neonatal nurses' perceptions of supportive factors and barriers to the implementation of skin-to-skin care in extremely low birth weight (ELBW) infants - A qualitative study. *J Neonatal Nurs*. 2018;24(1):39-43. doi:10.1016/j.jnn.2017.11.010
10. Chia P, Sellick K, Gan S. The attitudes and practices of neonatal nurses in the use of kangaroo care. *Aust J Adv Nurs*. 2006;23(4):20-27.

11. Lisanti AJ, Buoni A, Steigerwalt M, Daly M, McNelis S, Spatz DL. Kangaroo Care for hospitalized infants with congenital heart disease. *MCN Am J Matern Child Nurs*. 2020;45(3):163-168. doi:10.1097/NMC.0000000000000612
12. Collados-Gómez L, Esteban-Gonzalo L, López-López C, et al. Lateral Kangaroo Care in Hemodynamic Stability of Extremely Preterm Infants: Protocol Study for a Non-Inferiority Randomized Controlled Trial CANGULAT. *Int J Environ Res Public Health*. 2021;19(1):293. doi:10.3390/ijerph19010293
13. Sedgwick P. Questionnaire surveys: sources of bias. *BMJ*. 2013;347:f5265. doi:10.1136/bmj.f5265
14. Seidman G, Unnikrishnan S, Kenny E, et al. Barriers and enablers of kangaroo mother care practice: a systematic review. *PloS One*. 2015;10(5):e0125643. doi:10.1371/journal.pone.0125643
15. Patel N, Ballantyne A, Bowker G, Weightman J, Weightman S. Family Integrated Care: changing the culture in the neonatal unit. *Arch Dis Child*. 2018;103(5):415-419. doi:10.1136/archdischild-2017-313282
16. Willson M, Kumar V, Darmstadt GL. Centering and humanising health systems: empowerment through Kangaroo Mother Care. *J Glob Health*. 2021;11:03105. doi:10.7189/jogh.11.03105
17. Knight M, Bunch K, Vousden N, et al. A national cohort study and confidential enquiry to investigate ethnic disparities in maternal mortality. *eClinicalMedicine*. 2022;43:101237. doi:10.1016/j.eclinm.2021.101237
18. Bliss. Skin to skin and kangaroo care. Accessed February 2, 2023. <https://www.bliss.org.uk/parents/in-hospital/looking-after-your-baby-on-the-neonatal-unit/skin-to-skin-and-kangaroo-care>
19. UNICEF UK. Skin-to-Skin Contact. <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/implementing-standards-resources/skin-to-skin-contact/>

How to cite this article: Walker S, Ojha S, Mitchell EJ. Parents and healthcare professionals' attitudes to Kangaroo Care for preterm infants in the United Kingdom. *Acta Paediatr*. 2023;00:1-6. <https://doi.org/10.1111/apa.16795>